THE ILLUSTRATED POULTRY RECORD

Edited by E.T. Brown.

DUCK-BREEDING ISSUE

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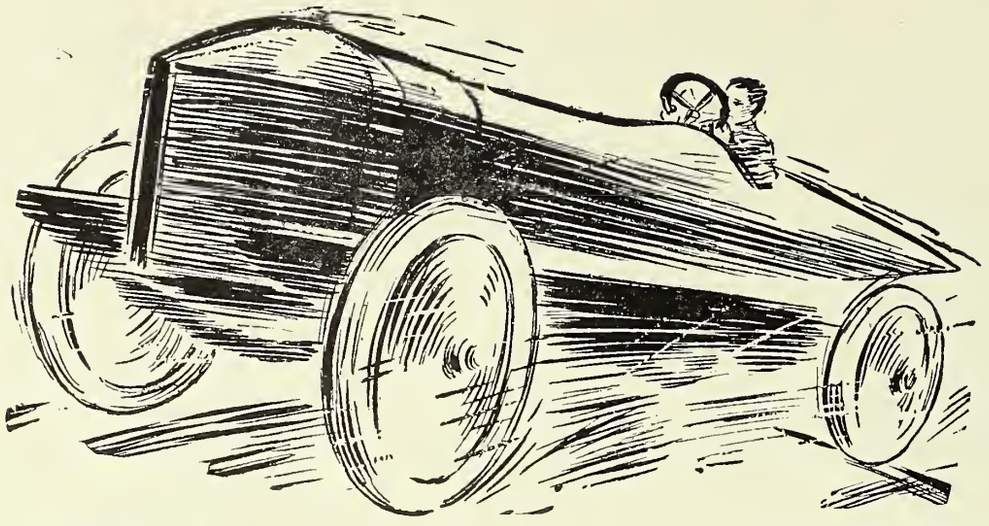

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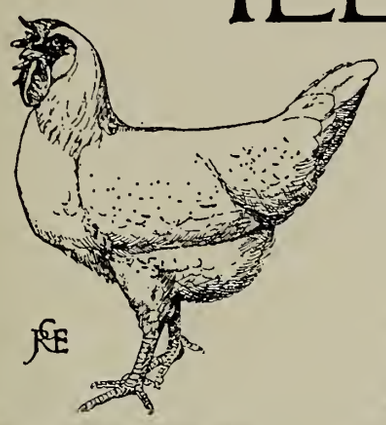
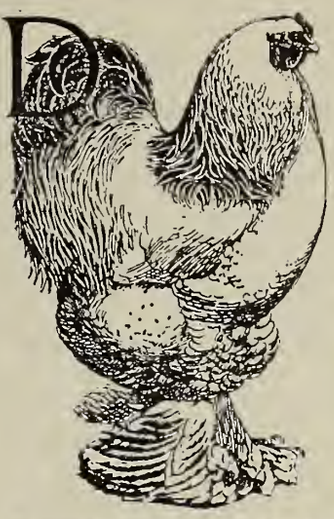
THE ILLUSTRATED POULTRY RECORD





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DIARY OF THE MONTH.

EDITORIAL NOTICES.

Telegrams: "Vivacidad, Fleet, London."

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The Editor will be glad to consider any MSS., photographs, or sketches submitted to him, but they should be accompanied by stamped addressed envelopes for return if unsuitable. In case of loss or injury he cannot hold himself responsible for MSS., photographs or sketches, and publication in the Illustrated Poultry Record *can alone be taken as evidence of acceptance. The name and address of the owner should be placed on the back of all pictures and MSS.*

The Editor would like to hear from readers on any Poultry Topics, and all Queries addressed to the paper will be answered by experts in the several departments. The desire is to help those who are in difficulty regarding the management of their poultry, and accordingly no charge for answering such queries is made.

The Annual subscription to the Illustrated Poultry Record *at home and abroad is 8s., including postage, except to Canada, in which case it is 7s. Cheques and P.O.O.'s should be made payable to the* Illustrated Poultry Record.

The ILLUSTRATED POULTRY RECORD is published on the first of every month. Should readers experience any difficulty in securing their copies promptly they are requested to communicate immediately with the Editor.

The latest date for receiving advertisements is the 20th of the month preceding date of issue.

The utmost care is exercised to exclude all advertisements of a doubtful character. If any reader has substantial grounds for complaint against an advertiser he is requested to communicate at once with the Editor.

The Duck Industry.

There is no individual branch of poultry-keeping that yields a higher proportion of profit than the hatching and rearing of ducklings for the early spring markets. In order to achieve satisfactory results the conditions must be favourable, while the poultry-keeper must know his business thoroughly. The rearing of stock birds is likewise a profitable branch, while the strength of the duck fancy is indicated in another part of this journal. Among the chief advantages which the duck industry possesses are the ease with which the birds can be reared; the rapid rate at which they develop, representing a quick over-turn of capital; the fact that such excellent prices are obtainable during the months of April, May, and early June; and the large number of birds which the land carries.

The counties of Buckinghamshire and Bedfordshire have for many years been famous for the number and the quality of their ducklings. These two counties are regarded, and rightly so, as the very centre of the business, and tens of thousands of birds find their way to the London and other first-class markets during the spring months. The town of Aylesbury has given its name to the most celebrated of the table varieties, and the old English White duck is now known the world over as the Aylesbury. Until quite recent years the impression existed in the minds of many people that there must be some special features of the soil or climate of Buckinghamshire and Bedfordshire which were peculiarly suitable. So firm was this idea held by some that it was thought to be little short of folly to attempt the hatching and rearing of table ducklings elsewhere than in these two counties. Owing to the fact that several large establishments have sprung up and succeeded in other parts of the country this idea is now known to be quite a mistaken one.

Inbreeding and Egg Production.

Under the above title an unsigned article appeared recently in the *Times*, advocating in the first part what may be even regarded as ultra methods of inbreeding fowls with the object of increasing the prolificacy. The arguments put forward in support are based upon the experience of fanciers who, in many cases, resort to this practice with a view to the greater perfection of various characters, which in many instances are artificial and sometimes abnormal. At the present state of our knowledge in respect to questions of heredity as applied to egg production, it is altogether too early to assume that what may be desirable or even forgivable in one case is equally applicable in the other. All the evidence we have shows that the primary essentials for heavy laying are activity of habit and vigour of constitution. Whilst the fancier prefers that his birds shall be hardy and active, these are merely secondary considerations. Hence if he is able to obtain specimens which are high in show qualities, even though they may be deficient in other respects, he is quite ready to make the sacrifice, and it pays him to do so. The poultryman, whether farmer or stock-breeder, to whom number of eggs is everything, would speedily come to grief by adopting such lines. Indiscriminate introduction of fresh blood is a mistake, for in that is no attempt to perpetuate prolificacy, but inbreeding is sapping the force which is making for that. In fact, the writer of this article contradicts himself, as he says later on that "there can be no question that vitality properly conserved and diverted is the secret of prolificacy, and there can equally be no doubt that injudicious inbreeding is a sure way of impairing vitality."

Country Poultry Clubs.

Some time ago business called us to a village in Eastern England where we had to spend an evening. Learning that there was to be a meeting of a local club in the village, we went there, and were highly gratified at what we heard and saw. About forty men and women were gathered for social intercourse, the men with their pipes and the women with sewing or knitting. It was informal in every sense, not a set lecture or speech. That night we were lucky, as poultry was the subject under discussion. One of the members gave his experiences, followed by suggestions as to what he hoped to do, and afterwards others criticised or supported. It was bracing, healthy, and stimulative, and we could not but wish that in every village throughout the land there were similar fortnightly gatherings. Perhaps when every rural community has its institute or public hall that may be the case. Meanwhile we are glad to see in our weekly contemporary, *Feathered Life*, some notes on this subject, together with letters telling what has already been done in this way. Cannot our central bodies concerned with practical poultry-keeping do something to foster such a movement? Interchange of idea and experience is ever helpful.

The Secret of Petaluma.

Doubts have been expressed lately, and in Californian papers as to a continuance, or otherwise, of poultry-keeping in the Petaluma district, which has made the proud boast of being the greatest poultry centre in the world An area which can send to market upwards of eighty seven and a half million eggs and more than 900,000 chickens in twelve months, as in 1911, can afford a little downs as well as ups. How far this can be continued, not to say increased, depends upon the methods adopted and whether the balance of nature is continuously maintained. In that case there seems no adequate reason for decline to any extent. All depends upon the relationship of cultivation to the poultry kept on the land, Mr. A. F. Hunter has been recording in the *Reliable Poultry Journal* his observations during a recent visit, which are very interesting. He states that 50,000 day-old chicks were shipped from thence in one day last April, and that fruit culture is being extensively linked with poultry-keeping. The success achieved is not credited to any specially favourable conditions of climate or soil, but to the "gumption" and example of one man, Mr. Byce, who was the pioneer, to the enterprise, enthusiasm, and energy of those who followed, to the welcome and help given to such who settled there, and to the excellent outlet for produce. Such is combination, not the least of which is the credit accorded to beginners by traders, for, as Mr. Hunter says, "Confidence is credit."

European Methods as Seen Through Canadian Spectacles.

Professor W. R. Graham, of Guelph, who, it will be remembered, was over in this country last summer, has been reporting his observations to a convention of egg and poultry buyers held recently at Chicago. In the course of his remarks he said that the greatest factor for success in European markets seemed to be standardisation of the various products, of which he gave many evidences in support, especially indicating that the Danish trade has been built up and maintained on these lines. In his judgment the greatest difficulty in Canada, and

presumably in the United States, is the long time which elapses in getting the new-laid egg into market. One reason for this is that the areas are much greater in America than in Europe. There are, however, many areas where the number of hens per acre is as great as in England. His opinion is that if an effort were made along this line much improvement could be made, and a great saving in the large losses from poor quality of eggs. He urged that poultrymen should produce as many infertile eggs for market as possible, and that every effort should be made to keep the new-laid egg under the best conditions for the conservation of its quality. It was also pointed out that the heavy loss by breakages in transit causes lower prices to be paid to producers.

A BUFF ORPINGTON DUCK AND DRAKE. [*Copyright.*
Drake—1st Dairy, 1911. Duck—2nd Dairy and 2nd Palace, 1911. These birds are acknowleged to be the finest in Portugal, and they belong to M. J. A. Monteiro.

"Won't Go in for the Business."

Spite of all the talk about intensive poultry-keeping and of Board of Agriculture experiments, the major food supply of a country depends upon ordinary farmers, native or foreign. Specialist plants are serviceable as an educational force and a means of grading up farmers to increased and improved production, but if we had to depend upon these starvation would be universal. The shortage of supply of table chickens and the consequent high prices which have prevailed within the last few weeks, more especially for home birds, are not due so much to the lack of what are called poultry farms as to the neglect of this branch of live stock on the part of general agriculturists. In this respect there is much yet to be done, and we hope that the work of the Table Poultry Club will be mainly in bringing influence to bear upon this section of the community rather than looking through specialist spectacles and promoting the interests of stock breeders and of exhibitors. These latter have their place. That, however, is only contributory to the former, in which direction the greatest results will be achieved A writer in *Country Life*, calling attention to this question, wisely states that "the consuming public will never get good and ample supplies of home grown produce till the larger farmer takes the matter in hand in real earnest." Further, he quotes the remarks of a prominent market salesman, who said that the shortage of English poultry was simply due to the fact that "our people won't go in for the business."

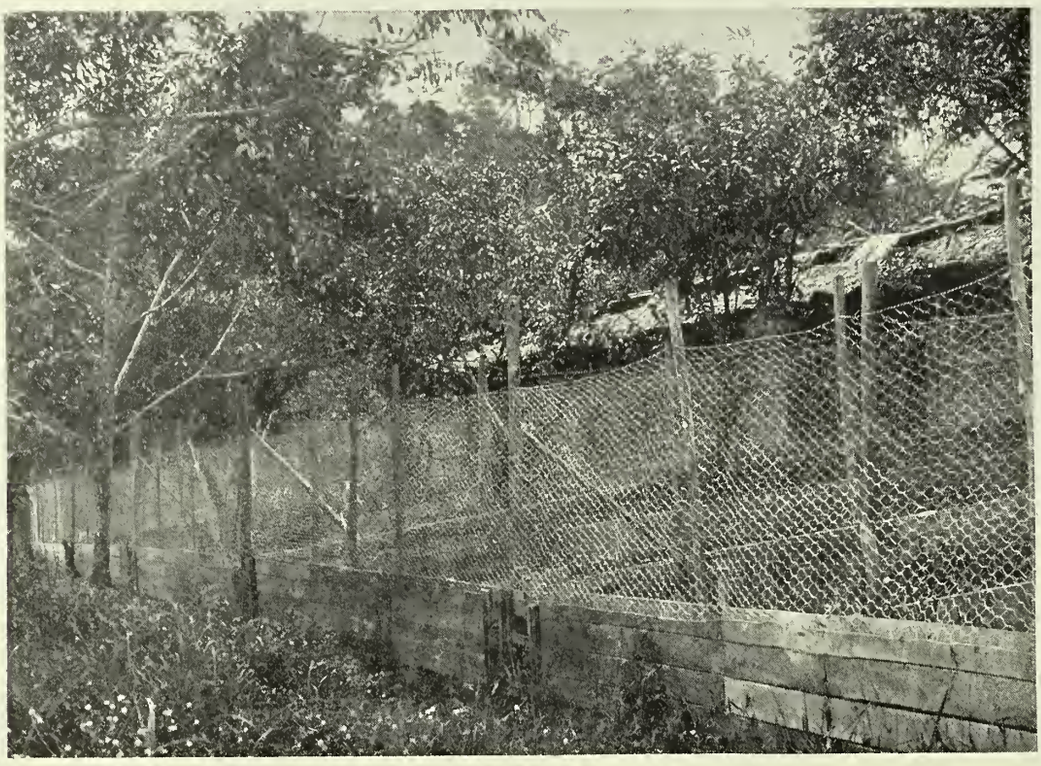
Exhibition Ethics.

How far ordinary canons of morals are departed from in connexion with poultry shows has always been a disputed point, but there are

those who appear to think that and act as if these are suspended in this connexion. In a case recently tried in the Manx Chancery Court, wherein a claim was made by the Rev. J. W. A. Mackenzie, of Whitwick, Leicester, upon the estate of the late Miss L. E. Murray, who was his partner in a poultry farm in the Isle of Man, there are recorded statements which demand attention, if the reports published are correct. With the general case we have no concern, but the *Liverpool Courier* says that "in cross-examination claimant admitted he judged at a show in England at which Miss Murray had exhibited birds from the partnership farm. He had awarded her a prize for one bird he had not previously seen, but passed another of her exhibits as he knew it." Apart from the personal factor, which may be left for the present, though, if the report quoted is correct, that must be dealt with, there is the general question. Surely it is one for the Poultry Club to take up without delay.

The Ever-Present Fox Question.

The President of the Utility Poultry Club has rendered a valuable service by his article on "Fox-hunting and Poultry-keeping," which appears in *Baily's Magazine*, wherein is stated in a fair and frank fashion the position as it affects poultry-keepers, as well as giving a statement of negotiations between the Joint Poultry Committee and the Masters of Foxhounds Association. Maybe some poultrymen would have taken a more emphatic line. One fact cannot be too strongly emphasised, as Mr. B. W Horne put it—namely, that "Those who hunt are unaware of the size and growth of the poultry industry, and seem to think that the methods of days long past are suitable for present needs."



Poultry Houses and Runs at Singapore. [*Copyright.*

POULTRY FARMING AT SINGAPORE.

IN presenting photographs of a poultry establishment at Chancery Lane, about 2½ miles from the town of Singapore, which is connected with a dairy farm there, it may be mentioned that this is being turned into a joint stock company. It is intended to produce eggs and table poultry, for which there is an excellent demand in Singapore, and also to breed birds for stock purposes. Experienced dairy workers have been engaged, and it is intended to secure the services of a poultry manager. How far the undertaking can be made a financial success we have no means of judging, and whether joint stock methods of poultry farming have greater opportunities in Eastern Asia than has hitherto proved to be the case in Western Europe remains to be seen.

COMMERCIAL DUCK FARMING.

By Edward Brown, F.L.S.

SEVERAL bad failures within recent years of big duck plants, in some of which considerable sums of money have been lost, might give a very erroneous impression as to the true state of affairs in respect to this branch of the poultry industry. So far as our experience has gone, duck raising on a large scale merely for market supplies, and on what may be regarded as intensive lines, is the only part of poultry-keeping which can be regarded as a practical success. Practically all plants in which egg-production or chicken breeding—that is, from hens—with which I am acquainted, have to depend largely upon the sale of stock birds, &c., to give them adequate returns. That is not the case with ducks, either at home or abroad. The explanation for the failures referred to above is simply that the promoters did not know their business, or that they commenced operations on too large a scale, with the result as stated. It is not so much capital, though that is necessary, as brains, experience, and hard work which make for success. Further, the really successful large duck plants in Europe and America have, like Topsy, in "Uncle Tom's Cabin," "growed," Many lessons could be deduced from these failures, but I must forbear, as there is too much to tell in other directions, and I wish to deal with places where success has been achieved.

Landsmeer, Holland.

During my recent visit to the Netherlands I was deeply interested in visiting a duck industry totally different to anything which I had seen previously, in that it is entirely for the production of eggs for market. Hatching and rearing ducklings does not enter into it at all. Full particulars will be given in my forthcoming "Report on the Poultry Industry in Holland" when further observations to be made are completed. In the meantime some information may now be given with respect to this place and its duck farms, for such these really are.

Landsmeer is a picturesque, long village on the shores of the lake or mere of that name. The polder, as it is called, extends for some distance. Streams of water, wide and deep enough to accommodate a barge, are on each side of the village roadway and also between each holding. Approach to the houses from the road is by means of foot-bridges, crossing the stream or canal, and high enough to permit barges to pass under. These well-kept, substantial dwellings betoken prosperity and comfort. Landsmeer is about equidistant from Amsterdam and the Zuider Zee. Here are nearly 200 duck farmers, whose stocks vary from 100 to 4,000 birds. It is estimated that within the commune 5½ millions of duck eggs and upwards of three million hen eggs are produced annually. Something like 50,000 ducks are kept within the area named. So important has been the effect of the duck industry that during the last thirty years 224 new houses have been built, and the population has increased by 700 in the time named.

Houses and Runs.

For the accommodation of the ducks long-range open-fronted sheds, built by the sides of the watercourses, are used, a view of one of which is here given. These have open yards about 30ft. long, in which a portion of the water is enclosed, so that the birds find free access to what is their natural element. About sixty birds are in each compartment. Thus on one of the places visited 2,800 laying ducks, in addition to 300 hens, are kept on a hectare of land, plus the water available. The houses and yards are littered out with straw, which is not removed, but more put on top as required. At the end of a couple of years it is taken away, and is very valuable indeed as manure. The houses and runs are fairly well built, but are plain and on practical lines.

Breed of Ducks Kept.

The class of ducks kept varies very considerably in colour of plumage, but universally are small in size of body, long and narrow yet full posterially. So far as I was able to see, there was nothing approaching the Indian Runner type, doubtless owing to the fact that they are bred on utility, not fancy lines. In weight they appeared to be larger than the Runners. A large proportion showed the white cravat which characterises many ducks in North-Western Europe, and which I have come across from Belgium to Sweden. These are black or very dark in the body plumage. A fair number had wild duck plumage. Amongst others were separate flocks on several farms, of a race with a very long head and bill, the latter of which curves downwards, the upper mandible apparently projecting beyond the lower. These have no special name, and are said to be obtained only from one farm. They are, however, regarded as the best layers. In this respect a general average is stated to be about 120 eggs per annum. It is claimed that the net profit is one gelder—that is, 1s. 8d.—per duck per annum, so that on this basis the margin works out at nearly £85 per 1,000 ducks yearly, which is

regarded as satisfactory in the country districts of Holland. Women do not share in the work, which is a man's business, as the former look after the house and home.

As already indicated, the ducks are kept only as egg producers, and they are not bred from, so that drakes are not run with them. The district around consists of a rich dairy farming country, where the famous Edam cheese is made, and of which the little town of that name is the centre. It is upon these farms that the ducks are bred and reared. The usual price paid is 1½ gelder (2s. 6d.) each at three to four months old, and they are kept as layers for three years, when they are fed off and killed. As a third of the flocks are replaced yearly it will be seen that upwards of 16,000 have to be purchased annually, so that the trade is a considerable one for the rearing farmers.

A Poultry House in Gelderland. [*Copyright.*

Fish Feeding.

By means of the watercourses everthing required in the shape of food is brought by boats to each farm, thus avoiding all cartage. Indian corn is largely employed in feeding, supplied in troughs, but the most important article of the duck's diet is a small white fish called Nest, which simply means young fish, caught in the Zuider Zee. The catching of this fish employs many of the boats which go out from the picturesque town of Volendam, a favourite resort of tourists and artists. It is regarded as indispensable for duck feeding, and I was informed by more than one duck-keeper at Landsmeer that when the supply is stopped duck-keeping is unprofitable. Upon this question much depends. Residents on the other side of the Zuider Zee, in which alone the Nest is obtainable, object strongly to the extension of the fishery, and a constant political and social struggle is ever present between the two parties. Nest are not found in lakes. By the side of each farm, suspended in the water, are square tanks, in which the fish is kept until required, brought to the side by barges from Volendam. The price for this fish varies from 6d. to 1s. 8d. per twenty kilogrammes (nearly 45lbs.) according to season and supplies. Experiments have been made with other fish, notably inferior mussels (*mosselen*), but the result has not been satisfactory. That meat is necessary for duck feeding has long been recognised, but this is the first instance I have personally come across in which living fish is regarded as indispensable and used instead of meat.

Landsmeer Notes.

Whilst there are many other points of interest recorded in my note-books, these must be left to the completed report. I may, however, call attention to the fact that here is a considerable and profitable industry in duck-keeping for egg production alone, where the natural advantages of abundant water, easy inter-communication, and utilisation of available and suitable food has contributed to the happiness and prosperity of an entire commune. Herr van Beek, the burgomaster at Landsmeer, informed me that when he took up that position twenty-nine years ago the people were very poor. Now all willing to work are prosperous, and the whole place and people have a cheerful and contented appearance. Much of what has been achieved is due to the fact that this development is general, not individual, for that means the marketing of produce is facilitated. So far as I am aware up to the present time this special form of duck farming is restricted to the Landsmeer district, whence, however, it is extending to other communes, and I saw several plants at Volendam.

Huttegem Ducks.

I do not propose to describe in detail the methods of duck raising adopted in Belgium, notably around Audenarde and Laplaigne, the last-named on the French border, as both of these have been dealt with previously. Those

who wish to know the full story can refer to my "Report on the Poultry Industry in Belgium." At the same time there are some points of difference to the system noted above which require to be stated. Equally at Landsmeer and the two Belgian centres just named, the work is entirely in the hands of smaller occupiers, who do the main part of the work themselves, and who make up for any limitation of numbers by intensification of method. Beyond that stage the methods are divergent.

In the Audenarde district the great plain below that city consists of rich, fertile water meadows, which are flooded for a portion of the year, and the villages border it just above the water line. It is not so much that the ducks are given access to the water, though that is true as regards the older stock, as that consequent upon the nature of and moisture in the soil there is an abundance of worms, upon which the birds live very largely, and which is regarded as essential to their growth. At Laplaigne the fields are divided by deep watercourses or ditches to which the birds have access. Some pictures of these have been given in the ILLUSTRATED POULTRY RECORD (1), one of which showinghow the worms areattracted to the surface, where they are seized by the ducklings, is reproduced. A further point is that at Audenarde many of the breeders think that the water-lentil which grows in the ditches has an important influence for good. At both these places the main object is producing ducklings for early killing. Eggs are of secondary value, except for hatching. Hence the number of breeding ducks is restricted to what will suffice to supply the eggs required. The same is true at English centres, but here again is a different method—namely, that whilst the majority of duck raisers are small occupiers, they do not keep the breeding stock, purchasing eggs for hatching. Such is not generally the case in Belgium. My own view has always been that to attain a continuous success with ducks, as with chickens, the breeders must be kept under natural conditions, by which is meant that they shall have a fair amount of liberty and free access to water, which is their natural element. Dry duck farming or keeping the stock in small yards may have a measure of success for a time, but sooner or later the penalty will be demanded. If the Landsmeer people attempted to rear young birds from the ducks kept in the yards referred to, it is certain that ere this they would have had to face loss of vigour and consequent difficulties from which they have escaped. As it is, a few years ago a serious epidemic broke out, causing heavy loss, due to overdoing the business. That there are limitations cannot be doubted. Our object should be to discern what these are. It is a hard lesson, but one that must be learnt.

A Duck-keeper's House at Landsmeer Village. [*Copyright.*

LARGER OPERATIONS.

It will be evident that there is a great gap between duck farming such as has been described above and the great plants met with in this country to a smaller degree and numerically to a larger extent in America. What may be

(1). Vol. I. page 508—9, May, 1909.

suggested is that the modest-sized holdings on which ducks are raised or kept will be the backbone of the industry, whereas the large, highly capitalised plant is the exception. Whilst the former are within the capacity and the means of many, the latter can only be open to a few, owing to the fact that the men able to organise and conduct an extensive establishment are few and far between, just as in all other branches of life. This fact is often forgotten, yet it is of supreme importance. It may be that in process of time we shall evolve by training and experience a body of men with the ability to handle big plants and manage large flocks. At present, however, they are not forthcoming. Even were that the case development will be gradual. Growth must be by stages. This is not a question of capital so much as brains and ability. Such places as Mr. Peter Walsh's in Lancashire and that of the Messrs. Weber Bros. in America, as well as many others, have been gradually built up. Had some of those who lost money in financing big duck farms been content to "make haste slowly," probably their records would have been somewhat different.

There is, however, a further point—namely, that, even where money and experience are available—the ordinary canons of natural influences must be observed. Long-range houses may be used for growing ducklings, though they are unnecessary, but these should not be employed for breeding stock. Even in the former a danger arises from accumulations of manure in the soil. Better is it to only use land for duck raising one year out of four, if on intensive lines, and to cultivate during the other three periods. This does not, however, apply where the number kept is comparatively small.

Watercourse Enclosure for Ducklings at Laplaigne.
[*Copyright*

STANDARDS AND IDEALS.

By W. M. Elkington.

THE precise relationship of the standard to the ideal is easily defined in theory but somewhat difficult to determine in actual practice. A standard is, or should be, a verbal definition of the ideal, and the reason why doubt is expressed regarding the relationship is because standards are of a fixed and rigid nature, whilst ideals are of a decidedly elastic character.

The progressive spirit of the British fancier has frequently been used as a text for his condemnation. He has been styled an extremist, a creature of whims and crazes, and every large show contains scores of living witnesses to the justice of this description. Take the modern Game, the modern Langshan, the modern White Leghorn, for instance, and if you are in a scornful mood you can vituperate for a full hour without stepping over the boundaries of truth and justice. In the cold light of commercial common sense these three breeds are absurdities. Or, if you prefer, take some of those varieties in which feather properties have been glorified and elaborated—the Barred Rock, the Silver Wyandotte, the Partridge Wyandotte, the Pencilled and Spangled Hamburghs, and consider the time and the money that has been lavished upon these breeds in perfecting the lacing, the barring, or the pencilling of a feather.

And, after all, it is only a matter of opinion whether or not the fancier is a misguided individual, and as there is not the slightest hope of turning him from his purpose, it is fortunate that in these days of utility strains it does not matter as it did in the old days, when most people had to depend upon fanciers' cast-offs if they kept pure-bred stock for utility purposes. It is just as well to understand that the modern fancier is absolutely unrepentant—that he will

go on improving and elaborating as long as there is any scope for his enterprise and skill, because it will save critics the trouble of running their heads against a brick wall, and it will give us all a chance to consider how to make the best of the inevitable.

For one thing, since we recognise the modern fancier as an extremist, it is easier to understand how it has come about that in some breeds the relationship between the standard and the ideal becomes more and more distant every year, for, as I have said, the standard is rigid and the ideal is elastic, so that whilst the fancier is continually elaborating his ideal, the standard, that was probably drawn up to suit his forefathers, becomes to all intents and purposes a dead letter. That is, perhaps, because British fanciers have never regarded their standards seriously enough, and, to go further, that shortcoming might with some justice be attributed to the comparative system of judging, of which one fault (for, of course, it has faults) is that it allows rather too much scope for individuality.

But whether the shortcomings of the judges are the cause or the effect of the standard's low credit is a question that calls for consideration. They, the judges, would probably say that if they were to judge strictly to standard, the best birds, according to modern conceptions, would not win. That is to say, the ideal has gone ahead of the standard in many breeds, and, to put it briefly, the modern judge takes his cue from the popular ideal of the moment. So that with the breeder going his own way and the judge following him, the authority of the standard never has a look-in, and in many cases the verbal descriptions, published year by year in club books as a matter of formality, are worse than useless, since they lead novices and newcomers to believe in and look for what does not exist.

In tackling the problem that is brought into being by this state of affairs it is quite as well to recognise that criticism of the fancier's go-ahead methods is absolutely futile. Wherever competition is keen there you will find somebody making a bid for distinctiveness, either in the direction of size or colour, or marking or head points. The non-fancier calls these excesses, as they rightly are, since in many cases they go beyond the standard requirements, besides setting up a vogue for one or more particular traits. But these excesses or achievements—call them what you like—mark the work of the cleverer, more progressive breeders, and as a general rule they are favoured by judges and followed by the general body of fanciers. Take the Barred Plymouth Rock as an example. Every show-goer has observed the tendency to very fine, sharp barring that has characterised the winning specimens at leading shows during the last few years. Every season the barring gets finer and sharper, so that people have been heard to exclaim, more in earnest than in jest, that in a year or two the barring will be more correctly described as pencilling. Every breeder is striving to produce this fine, snappy barring, and the fact that Barred Rocks are losing in size and becoming narrow in body suggests that the trait is not being elaborated without some sacrifice.

Yet it is extremely unlikely that Barred Rock fanciers will yield the ground they have won in this direction and return to the moderately fine barring of five years ago. They are improving, elaborating feather properties, and when fanciers get going in that direction there is no stopping them. They will not come back to the old standard, so the standard must be moved up to meet them.

I can give you an instance out of my own experience, having quite recently been engaged with others in revising the standard—or, rather, drawing up a new one—for the Partridge Wyandotte in order to meet modern requirements. This variety has attracted the attentions of some of England's cleverest breeders, and the result is very obvious if you compare the Partridge Wyandotte with the Partridge Cochin, for it is less than two decades since the former was evolved from the latter. Partridge Wyandotte fanciers based their standard on that of the Partridge Cochin, and now, in the tenth year of the Partridge Wyandotte Club's existence, it has been found necessary to abandon the old description as out of date. The reason is easily explained. The Partridge Cochin is now what it was twenty years ago. There has been no keen competition, and neither the colour of the males nor the pencilling of the females has reached the ideal set by the standard. On the other hand, the Partridge Wyandotte has enjoyed a very considerable vogue, and having no complications in the form of foot feathers like the Cochin, its feather properties have received special attention. The result is that we find the standard descriptions out of date and either inaccurate or indefinite. Instead of rich bright red in the top colour of males we are calling for bright scarlet, and in place of orange or golden red hackles we demand that they shall be rich orange-yellow shading into rich lemon-yellow, allowing, of course, for the glossy black stripe. Again, in hens we are not satisfied with the demand for feathers distinctly and plentifully pencilled; we are calling for fine, clear pencilling with three or more lines of black on each feather, the meaning of which will be more apparent if you will examine the feathers

of a Partridge Cochin hen, for there you will find but two broad lines of black, representing a type of pencilling that Partridge Wyandotte fanciers have discarded. A year or two ago at Birmingham Show the Partridge Wyandotte classes were penned just above the Partridge Cochins, and I remember one of England's veteran fanciers comparing them as the sublime and the commonplace. Indeed, I doubt if anyone who saw those birds at Birmingham would have denied the remarkable improvement achieved by the elaboration of the old ideal.

Fanciers *will* concentrate attention upon extraneous properties. They *will* go on improving and elaborating, sometimes on sensible lines, and often on lines that appear to the outsider absolutely ridiculous. It would be useles urging them to desist or to return to the simple ideals of the standard, and the only course that gives any hope of preserving the Fancy from chaos is to urge them to carry their standards along with them and revise them as necessities arise. The progressive breeder may, from his own point of view, justify the most extravagant departures and the most elaborate excesses, but by no process of reasoning can he reconcile an ideal representing the views of the present year of grace with a standard that was drawn up by and for fanciers of a previous generation The least he can do is to bring his standard up to date, as the Partridge Wyandotte Club has done, or put it in the fire and do without one.

DUCKS FOR TABLE AND EGG PRODUCTION.

By J. W. Hurst.

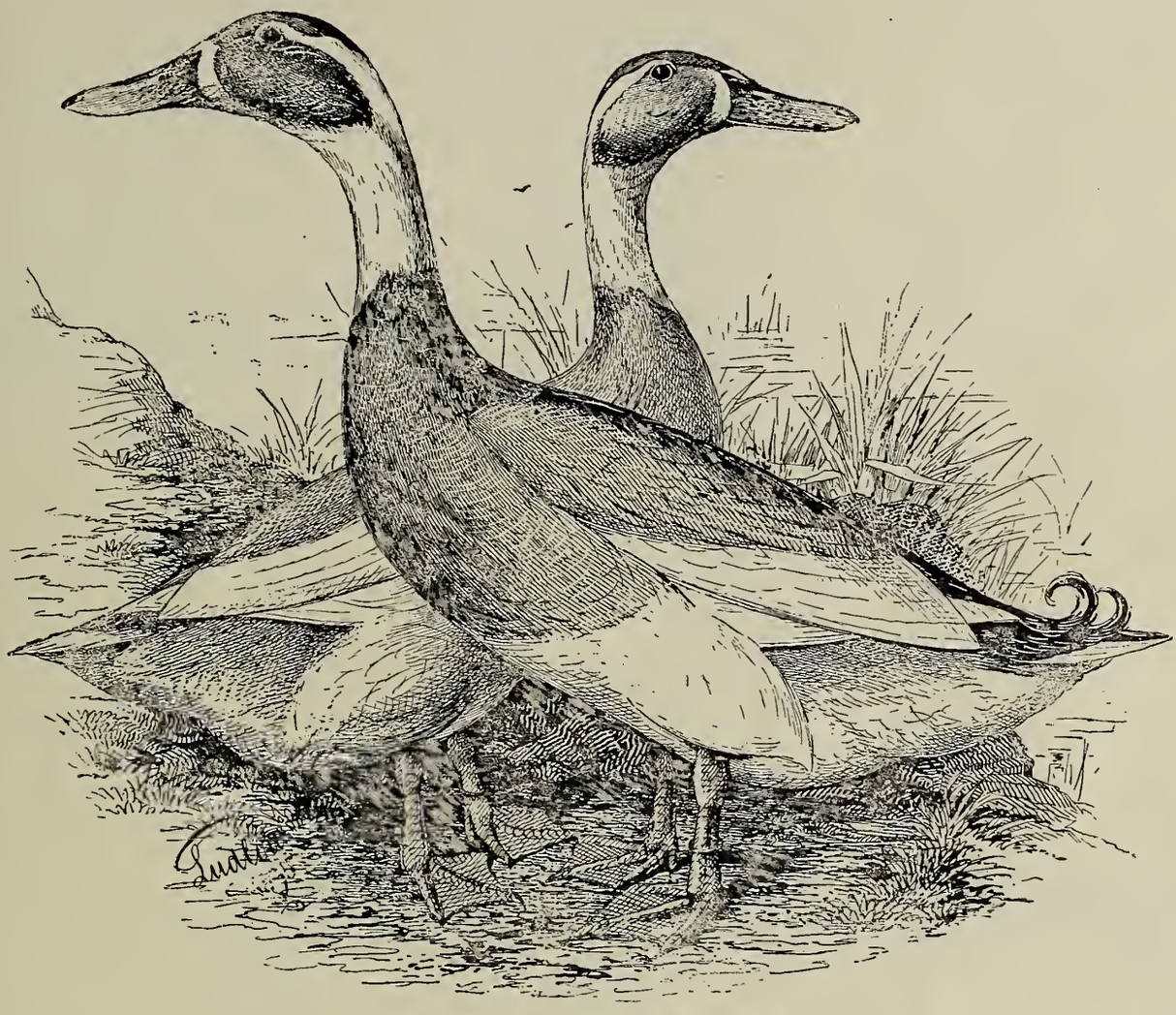
I DO not know why the duck's egg should have acquired an idiomatic significance so peculiarly its own, but it is a fact that the egg which in slang stands for nothing is not very seriously considered in actuality—except as the necessary preliminary to duckling production. When it is considered that there is a distinct laying-type duck it is curious that the majority of English poultry-keepers who stock ducks at all keep them for the production of ducklings rather than of eggs for table use. It is noteworthy too, that, as far as English laying tests are concerned, the duck's egg is as much a cipher as is its meaning in school and sporting parlance. Just why this should be is not entirely apparent, and it would seem that the chief reason for the comparative unpopularity of the duck's egg as an article of diet is based upon a prejudice which is in a measure as unreasonable as that which depreciates the white-shelled hen's egg by comparison with the brown. It is true that there is a difference of flavour in the one case which does not exist in the other, but this is perhaps unduly exaggerated in view of the fact that there are modifying factors. Whilst it is inevitable that the character of the demand must influence production, and that customers who require hen's eggs must be supplied with the produce for which they ask, there is no reason why the laying-type duck should not be more freely used for private needs. Any increase in this direction would almost surely, if slowly, tend to reduce prejudice and gradually extend the opportunities for a fuller use of the duck as an egg, as well as a duckling, producer. Anyway, the laying-type duck is capable of such a high level of prolificness, and its eggs are so much more palatable than is very commonly supposed, that it merits a more general recognition than it is usually accorded. If it is true that the popularity of exhibition varieties of fowls depends largely upon the manner in which they are "boomed" and the space afforded the discussion of their qualities in the fancy Press, it follows that economic characteristics must be more carefully and generally considered in proportion as they find a place in the writings of utilitarians. Perhaps, therefore, the duck's egg would be more highly thought of if writers devoted more attention to the laying-type duck, instead of almost invariably associating duckling production with any mention of duck-keeping for profit. To emphasise this point I will in the present instance reverse the usual order, and place the laying-type duck in the forefront of these remarks.

The Laying-Type.

There can be no question that the Indian Runner furnishes the best example of the laying-type duck as we know it, and as it is known in Australia and in the United States of America. Its performance records are sufficient proof of the fact. But it is the Indian Runner as selected and bred for egg production, without reference to the exhibition points sought by waterfowl fanciers. The economic value of the Indian Runner depends upon strain, and as in the case of ordinary fowls there are good and bad egg-laying strains. It may, however, be suggested that birds of this type are characteristically prolific, which may, perhaps, be regarded as an indication of long continued domestication and selection for the given purpose. In this respect it is reasonable to assume some analogy

between the laying-type duck and the laying-type hen, and the Indian Runner has not been termed "the Leghorn of the duck family" without reason.

In order that the runner may excel as a layer it is, however, necessary to maintain the strain —as in the case of hens—and to manage the birds correctly. The birds must be kept under suitable conditions, and the economy of production requires that they shall have the run of a good range. The breed is remarkably active in foraging, which is peculiarly characteristic—as also is the fact that it is able to do without access to swimming water better than other domestic breeds. Compared with other breeds, it is inexpensive to keep. It is hardy and easy to rear, but to obtain the best and most profitable laying results the ducks should be six months old or more before they are encouraged to commence egg production. Their eggs approximate in size to that of average large hen's eggs, and as they seldom develop the incubating habit, the ducks of good strains are almost all-the-year-round layers. Although the keeping of individual egg-laying records for the purpose of strain making and maintenance would appear to be less simple than in the case of hens, there are various comparatively easy methods of doing so with a sufficient approximation to accuracy to ensure reasonably reliable mating. In any case the utility breeder must remember that the type that characterises the layer is of paramount importance by comparison with colour markings.



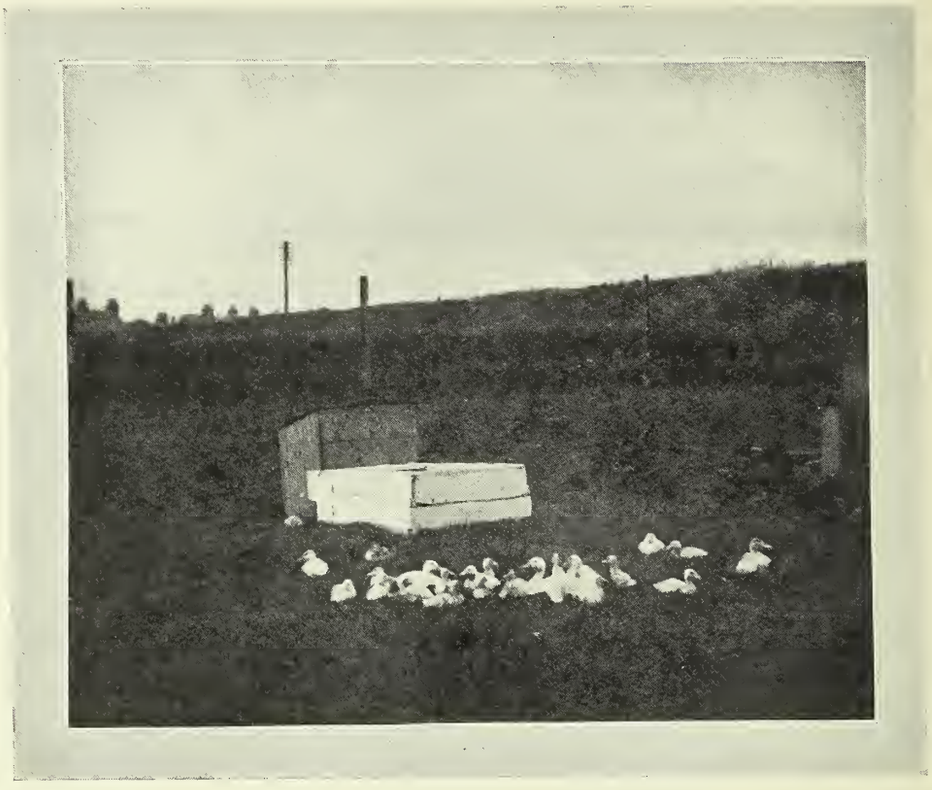
Indian Runner Duck and Drake. [*Copyright.*
The finest egg producer there is.

The Table Type.

For the average requirements of the English duckling producer, there should be no need to look beyond the Aylesbury of the utility type. The importance of this breed lies in the fact that it is peculiarly adapted to the needs of the early duckling trade (the seasonable production most worth attention), inasmuch as the young are better able than those of other breeds to attain a sufficient size and weight at a relatively early age, and the quality and flavour of the flesh cannot be equalled. Here, again, the special capabilities of the breed undoubtedly result from a long continued evolutionary selection for the one purpose, and the history of the breed and its connection with the Aylesbury

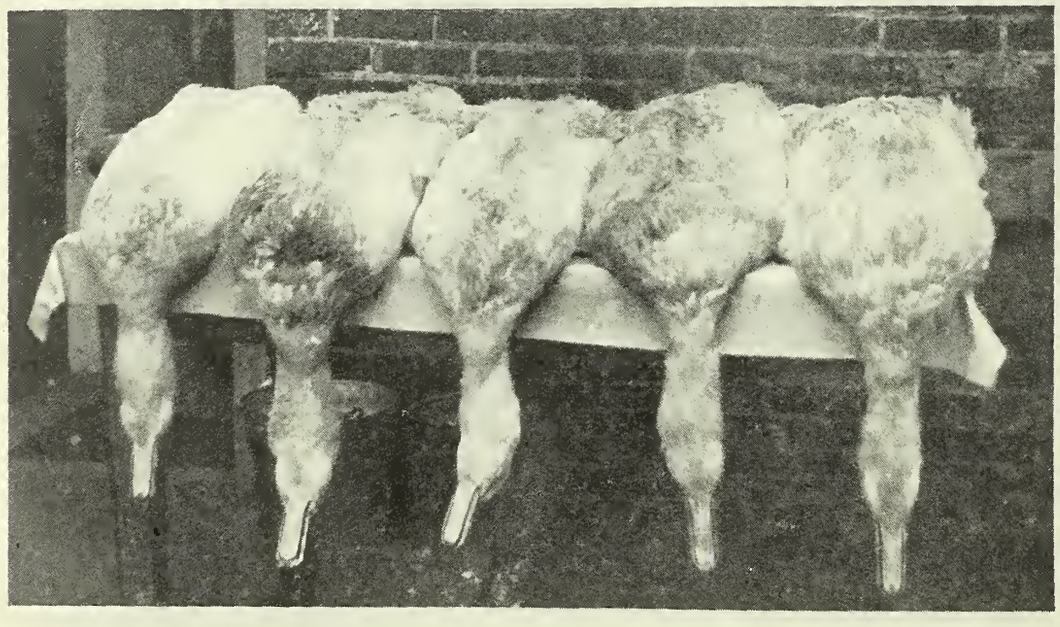
duckling industry is too well known to need very particular mention. Moreover, the Aylesbury type is so dissimilar from that of the Indian Runner, and most readers must be more or less familiar with both, that detailed descriptions appear to be quite unnecessary

The Pekin is extensively used in America, as it is to some extent in England, but although it has a better reputation as a layer than the Aylesbury, its appearance is apt to be deceptive from the table point of view. It may, perhaps, be most economically used in cross-breeding by those who prefer crosses for particular purposes of their production. There are also undoubtedly some strains of the Aylesbury that owe something to the judicious introduction of Pekin blood. Nevertheless, although the Pekin influence has had such a remarkable effect upon the development of production in America, the position of the Aylesbury remains practically unassailed as far as the best English production is concerned—for which it may be regarded as the ideal table type. But the claims of the Rouen must not be overlooked in the general connection, although as it does not make such rapid growth as the Aylesbury, it is not so suitable for the needs of those who specialise in duckling production. Given time and good feeding, the Rouen is, however, an excellent table bird for later requirements than those for which the Aylesbury is so peculiarly suitable.



Fattening for Smithfield. (See below). [*Copyright.*

For the general purpose of many farmers it is a very suitable and satisfactory breed, although its capacity for attaining massive proportions is incompatible with a quick development and early maturity. It fattens well and produces full-flavoured flesh of fine quality in abundance, but whilst it is a relatively good layer, it does not usually begin production very early; this is, however, largely a matter of strain, good management, and suitable conditions.



Some of the same birds as shown above. [*Copyright.*

These birds were winners at the last Smithfield Show, and their average weight was 12lbs. each.

THE SEVEN PHASES OF THE POULTRY INDUSTRY.

By Wilfrid H. G. Ewart.

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II.—EGG-FARMING.

EGG-FARMING is purely a development of specialism. Specialism came in with the present century and influenced all branches of commerce, including the poultry industry. Nowadays the poultry industry largely depends on specialism, and egg-farming is at the back of it. There is a certain ideal and a certain experimental quality about this particular branch which gives it a level of its own. I cannot imagine the ordinary poultry-keeper—the farmer of whom we have already written, the cottager or the farm-yarder—carrying it to a successful issue, because it demands special treatment and special capabilities. In every prospering industry there is an aspect of that sort, for nowadays specialism is to a large extent the measure of progress. Nor would our poultry-keeping ever advance were it not for science applied to productiveness. The line-breeding, the zealous confinements of strain, the trap-nest, and the recording sheet are all part of a deliberate and scientific attempt to achieve larger returns at a lower cost. But these are for the skilled labourer, not for the rough-shod rank and file; they are the highest development of poultry-keeping by the cleverest practitioner; it is the ordinary man who benefits by and pays for the results. And this is why egg farmers belong to an educated and highly intelligent class; and this, too, is why egg farming comes second in importance as a specialised branch of the poultry industry.

There are three essential equipments at the start—Courage, Capital, and Capacity. Courage is required to set out upon an enterprise, to start which considerable capital is necessary, while to carry it through successfully there must be exceptional capacity. But egg farming cannot stand alone. It is essential that it should be carried on hand-in-hand with fruit and poultry and bees and a cow if a living income is to be derived. And this is recommended not so much because poultry farming *cannot* be made to pay alone as because that test should not be demanded of it. When a certain quantity of land—ten, twelve, or sixteen acres, say—is taken over for cultivation, that land, according to every sane and economic law, should be developed to the utmost. More especially so surely, when each side-line undertaken can be made to co-operate perfectly to mutual advantage.

Now let us define the egg farmer. Surely he is the man who runs permanently a large flock of poultry for the elementary purpose of producing eggs. It is not necessary that all the eggs he produces should be marketed for edible purposes; rather is it his main business to disseminate by means of sittings and stock the valuable strain he has built up. He must advertise; he must commercialise; he must enter his birds in public laying competitions; he must practise all those arts to dispose of his wares at the best possible price which men of business habitually employ. By selling good stock, by winning prizes in laying competitions, and by judicious advertising he will acquire a certain reputation, and people will readily and numerously come to him for eggs and birds. This is no fanciful picture. There exists in the poultry world no wider, no more profitable field than egg specialisation, because there are few enough men at the game. But then, as has been said, it is a refinement of poultry production.

And how to achieve this end? First by building up the strain. Successful men have often enough started with one pen of good stock, line-bred and carefully selected. There is a cockerel perhaps and ten young hens. These will be trap-nested and every possible chicken bred from them. It would be a safe plan to run on the chickens till their second season, partly on account of the better maturity so obtained, also because a year's trap-nesting would definitely aid selection. Not a few breeders actually adopt this plan. Strain means family, and it is just as necessary for an egg specialist to fix prolificacy in his strain as for a fancier to fix some peculiar point of form or feather in his. In each case line-breeding and inbreeding must be the vehicle. The trap-nest and recording sheet are essentially information. Were the breeder to discard them, he would find himself completely in the dark as to the most valuable units. Trap-nesting invariably brings about surprising revelations, for it is not always—nor even usually—the best layers which are the best breeders. Were this so, progressive egg-production would be a simple matter. There is further the question of breeding from pullets. Egg farmers nowadays have little objection to this, but mating them with cockerels is an altogether different matter. The intermating of young birds where vitality is the main consideration cannot be looked upon with favour. And as to inbreeding. Logically it is as fully

necessary for fixing productiveness as any fancy point, and yet we cannot carry it to the same lengths. For here is required not the artificial character but the acme of exuberant vitality; nor is the atmosphere to be in the main an artificial one, but of the open air, the field and the hedgerow.

So much for the breeding of layers. Next as to the conditions of egg-production. There have come into being these later years methods and appliances which tend towards prolificacy at the expense of stamina. Possibly the egg system in its original and moderate form—the house and the shed adjoining, the grass run without, and confinement only on exceptionally days. This, I take it, is the true principle of the thing—not a form of artificial egg-production entirely misnamed "Utility."

Three distinct forms of egg farming are generally met with. There are the grass runs, each with its house and scratching-shed—runs perhaps of half an acre or less wired round; these are often arranged on the American "alternate" system—that is to say, two runs are

A Utility Pen of first-cross hens on a poultry farm where fruit is very extensively and very successfully grown. [*Copyright*

returns are greater under the intensive system, whereby the layers spend their winter days in a huge scratching-shed lighted, perhaps, by electricity, than would be the case were those same birds out in the open. On the other hand, what is the use of fowls so kept and bred to the farmer and cottager? I cannot help thinking that much of the bronchial trouble which develops in such birds when they are run out in the open is due to antecedent conditions, and one cannot feel certain that in the long run it will pay the egg farmer to treat his stock in this manner. The additional expense of erecting such elaborate buildings must be great while a considerable amount of trouble is necessarily involved. Not that I oppose the scratching-shed attached to each house, being used in three months' period, one rest, the other come on, so that the birds constantly have the inestimable benefit of a change of fresh ground. Then there is the colony system applied by large farmers who have specialised in egg-production. Under this the birds are run in flocks seldom exceeding thirty-five in number out on the pasture, on the hay fields and the stubble. Except in winter, this is an ideal existence for poultry, feeding being cheap, egg returns high, while fecundity during the breeding season is extraordinarily good. In winter, however, the birds must be got into the spinneys or rickyards else after stress of weather, eggs will prove surprisingly scarce.

There remains the third, and, on the whole, most successful method of egg-production—namely in combination with fruit. The latter benefits the poultry in many ways. Fruit trees provide acres of perfect shade while they foster an almost inexhaustible supply of insect life. Again, the poultry benefit the fruit by devouring injurious grubs and insects, by fertilising the soil, and by scratching the rank grass and weeds with their well-known persistence. Usually the fowls are run over such land in pens divided up by low wire netting, fences over which they show no inclination to jump or fly; sometimes, however, large stretches of land planted with half-standard trees and bush-fruit in between are tenanted by the birds.

ENTERING HER RECORD. [*Copyright.*
A White Orpington pullet on a large utility poultry farm.

What then about egg-farming as a profitable investment? Day-old chicks are sold at 6d. each, eggs at a guinea a sitting in same cases, cockerels up to 21s., pullets not less than 5s., if of a well-known strain. Any amount of stock is distributed throughout the country, and the successful man will find he can sell almost more than he can breed.

TWO PROFITABLE BREEDS OF DUCKS.

By Fred. W. Parton,
(*The University, Leeds*).

WHILE the duck breeder has not the same number of varieties from which to choose as that offered to the ordinary poultry keeper, there are breeds that fulfil every purpose for which they are intended. If he is an exhibitor, then he has considerably larger scope, so far as numbers are concerned, than has the utility breeder, since, in addition to the recognised economic breeds, there are many others at his disposal.

The chief utility breeds of ducks are Aylesburys, Pekins, Rouens, and Indian Runners. All of these have their partisans, each of whom declares that his own choice is the best. This term, however, is equally as ambiguous as when it is applied to the ordinary fowls, since it is well known that no one breed of poultry can possibly excel in every economic quality, although it is somewhat difficult to convince the enthusiast that his particular breed is lacking in any respect The same is equally true of ducks, and each of the above-mentioned breeds has special qualifications of its own. It is, however, with the two white breeds that we are at present concerned.

The Aylesbury.

This breed has many great qualities, but the greatest of these is its early maturity, and the remarkable rapidity with which it reaches the killing stage, and this at a time when the highest prices are to be obtained. There is probably no other breed or cross that is its equal in this respect, and since the Aylesbury is purely and simply kept for supplying the spring markets, it goes without saying that therein lies its chief economic quality, and the reason why it is so extensively bred in the duck fattening counties of Buckinghamshire and Bedfordshire. The flesh is white and of excellent quality, and it is placed on the right part of the body, that is a small amount on the legs, and abundance on the breast and sides. This in itself is an important consideration, and one that appeals very strongly when it is displayed for sale, since there is a minimum amount of bone and refuse, and it consequently compares very favourably with other varieties that may be considerably older, in that there is a larger proportion of edible matter than is the case with other breeds. This is, of course, of paramount importance from the producer's standpoint, since ducks are big eaters, and every day a bird is kept alive longer than is absolutely necessary, it reduces very considerably the ultimate profit.

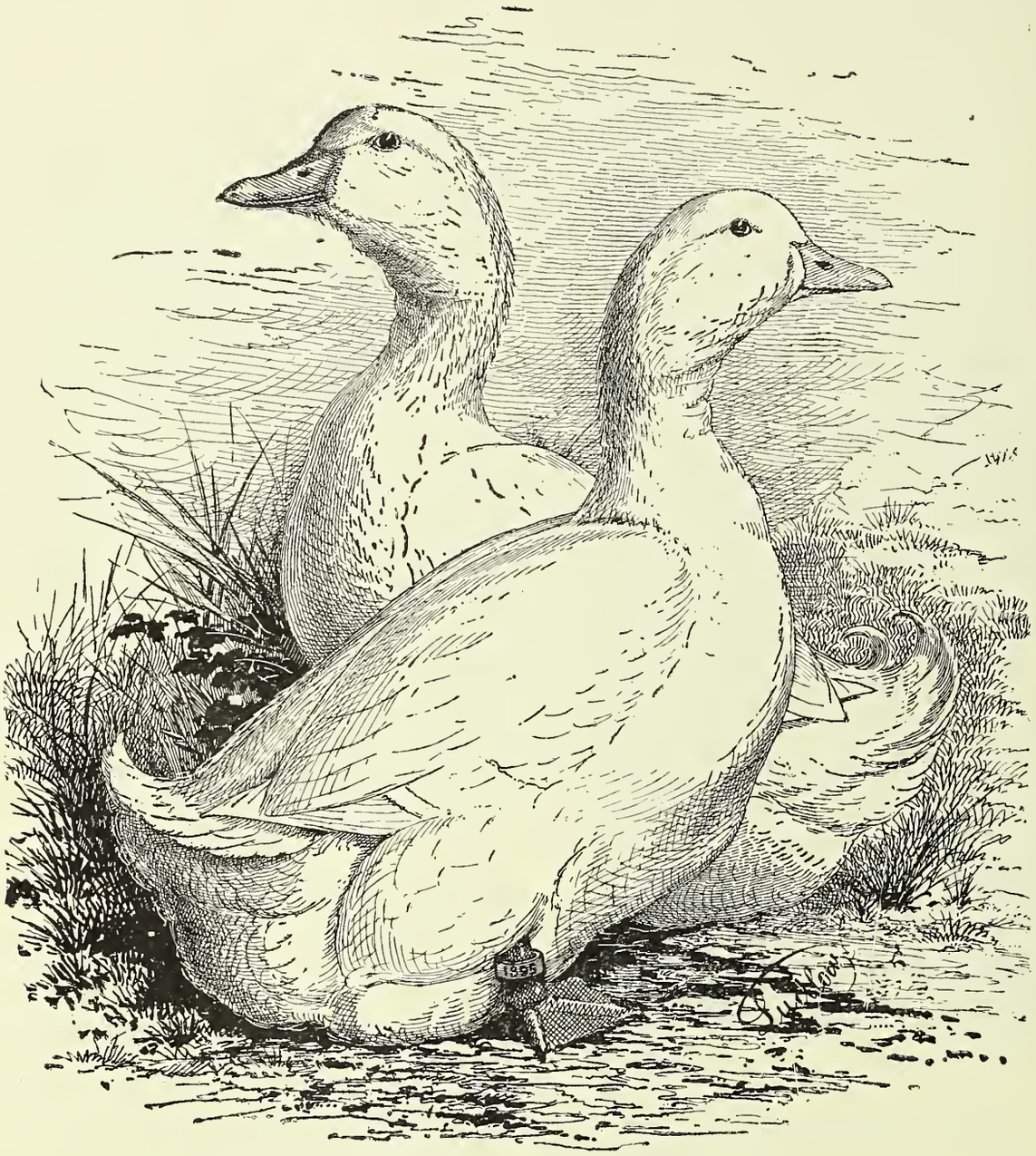
Although the main value of the Aylesbury is its table qualities, yet they are by no means to be disregarded as layers. This is, of course, as with all other classes of poultry, largely a matter of strain

but it is by no means uncommon for ducks of this breed to lay up to eighty eggs in the season. I have heard of over a hundred having been produced, but this is very exceptional. They are fairly hardy, yet they require care, and must be kept under favourable conditions if full advantage is to be secured of all their sterling qualities.

Their distinctive external characteristics are as pronounced as are their economic qualities. There is only one variety, namely, the white. It should be perfectly white in plumage, without any streak of yellow. The bill is long and tapered, running straight down from the top of the head. The head is large, and the neck is rather long. In body it is deep and straight, with very prominent breast. It is long and flat in the back, the tail runs almost parallel with the back, while the legs are thick, well apart, and orange coloured.

The Pekin.

This breed, which came from China about forty years ago, does not equal the Aylesbury in meat properties, even when it is in the best condition. Not only so, but whereas an Aylesbury should be in prime market condition at nine or ten weeks old, the Pekin requires at least two or three weeks longer preparation before it reaches the same stage. The Pekin does not lend itself so readily to fattening as does the Aylesbury, nor is the flesh of the same texture or colour, being yellow, and rather inclined to coarseness. In appearance the Pekin



A PAIR OF PEKIN DUCKS. [*Copyright.*

looks to be quite the equal of, if not larger than, the Aylesbury. This is accounted for by its profuse feathering. When it is plucked it does not compare at all favourably with its close feathered rival. It is, therefore, not so suitable for marketing in its first feather, and this should be the main object to strive after. It is in fairly good edible condition soon after it acquires its adult plumage. It is a wonderfully good layer, and it is probably in this direction where lies its advantage over the Aylesbury. It is white in plumage, with just a slight straw tinge running through the feathers, and it is owing to this very slight difference—which is not always apparent—that very frequently it is mistaken for the Aylesbury, and *vice versa*. It is quite possible that exposure to the sun during the summer months may give this tinge of yellow to the Aylesbury, while the sun has the opposite effect on the Pekin, and has a tendency to whiten the feathers. It is, therefore, quite an easy matter to mistake the two breeds, that is when it is imagined that the colour of plumage is the only respect in which the two varieties differ. A comparison of their external characteristics will, however, at once show that in appearance they are entirely different, and knowing this, there should be no difficulty in distinguishing one breed from the other. We have often known of disappointment when an attempt has been made to meet the large demand for spring ducklings by the inferior quality, which, of course, meant smaller prices.

There are several other distinguishing features between the two breeds, of minor importance. In the first place, the heads are quite different in shape; that of the Aylesbury is long and slender, with a gradual slope towards the base of the bill, while the head of the Pekin is shorter, and much thicker, and goes abruptly up from the bill, while it is also thick and less pointed. A further difference, and one that cannot well be mistaken, is in the colour; the Aylesbury's bill is of a flesh tinge, and that of the Pekin is deep orange. The legs are the same shade of colour. The shape of the Pekin is upstanding, whereas the Aylesbury's body runs parallel to the ground.

HOW MANY OVA DOES A HEN CONTAIN?

By Dr. Raymond Pearl.

To what extent are observed variations in fecundity, (i.e., in the number of eggs laid), to be referred to anatomical differences? In other words, does the ovary of a high producing hen, with, for example, a winter record of from 75 to 115 eggs, contain a larger number of oocytes than does the ovary of a hen which is a poor producer, laying no eggs in the winter period, and perhaps but 10 or 15 eggs in the year?

To get light upon the question, the observations to be described have been made. The object was to arrive at as accurate a relative judgment as possible regarding the number of oocytes in the ovaries of different individual birds. It is, of course, practically impossible to determine absolutely the total number of oocytes in the ovary. What can be done is to count the number of oocytes which are visible to the unaided eye. While such results do not tell us, nor enable us to estimate with great accuracy, the total number of oocytes in the ovary, they do, nevertheless, throw interesting and useful light on the question raised above.

The counts of the visible oocytes for a number of birds are given in the following table. * * * So far as I am aware, the counts here given are the first attempt yet made at anything more than the roughest sort of a guess at the number of eggs in a bird's ovary. While these counts do not give the total numbers, they do establish minimum values. A given ovary certainly does not contain any less than the number of visible ova.

A word should be said as to the method of making the counts, and the meaning of the subdivisions of the table. The counts were made in some cases on fresh, and in other cases on preserved ovaries. There was found to be little difference in the two methods, as regards the ease and accuracy of counting. In making the counts, small pieces of ovary were cut off, and teased apart with needles under water, and the visible oocytes on the small fragments were counted. In delimiting boundaries where a number of small oocytes were closely packed together, a hand lens was used. No oocyte was counted, however, which could not be seen with the unaided eye. In other words, the lens was not used to find oocytes that might otherwise be missed, but merely to aid in the dissecting of the material.

In the oocyte counts given in the table, it will be noted that these are grouped into four categories. The first class includes ruptured follicles from which the ova have been discharged. A ruptured follicle which is large at the moment the ovum leaves it, gradually shrinks in size and is more or less completely absorbed. On the ovary of a hen which has laid, however, there will always be found a certain number of these discharged follicles not yet absorbed. When such follicles get very small it is exceedingly difficult to distinguish them from small oocytes, (i.e., undischarged follicles). Undoubtedly

[The above is an abbreviated reproduction of an article by Dr. Raymond Pearl, which appeared in a recent issue of the *Journal of Experimental Zoology*, which throws a flood of light upon a question around which many erroneous ideas have gathered. *Editor, I.P.R.*]

there are errors in classification in this respect in the counts, but for present purposes this is not a matter of great importance. If the eye were sharp enough, it might perhaps be possible to distinguish a ruptured follicle for every egg which has ever been laid, since it is doubtful if the absorption is ever so complete as to leave absolutely no scar. It is of interest to note that in the counts there is a reasonably close relation between the follicle count and the record of eggs laid.

The oocytes are divided in the counting into three classes: Those 1 cm. or over in diameter, those between 1 mm. and 1 cm. in diameter, and those less than 1 mm. in diameter. The first of these classes includes the large yolks nearly ready to leave the ovary and pass into the oviduct. They are in process of rapid enlargement by the deposition of yolk. The next class includes those oocytes in which yolk deposition is started, but is proceeding at a slow rate. It is from this class that the class of rapidly growing yolks is constantly being recruited. Finally the 'under 1 mm.' class represents the make-up of the bulk of the ovary. It will be understood that these size classes are only roughly delimited, the diameter of each oocyte having been estimated but not carefully measured.

Columns in the table are devoted to 'Total number of eggs laid in life' and 'Winter production.' The first of these has no particular significance, since obviously it depends on when the bird was killed in order to make the oocyte count. Winter production, however, represents a definite entity in fecundity. Winter production records are directly comparable with one another It is the inheritance of this fecundity unit that is primarily being studied in these investigations.

From this table a number of points are to be noted. In the first place it is clear that the number of visible oocytes in the ovary of a hen is very large, much larger, I think, than has generally been supposed. * * * It is furthermore, apparent that the absolute number of oocytes in the hen's ovary is much larger than the number of eggs which any hen ever lays. A record of 200 eggs in the year is a high record of fecundity for the domestic fowl, though in some cases it may go even a hundred higher than this. But even a 200 egg record is only a little more than a tenth of the average total number of visible oocytes in a bird's ovary, to say nothing of the probably much larger number of oocytes invisible to the unaided eye, but capable of growth and development. In other words, it is quite evident from these figures that the potential anatomical fecundity is very much higher than the actually realised fecundity, This is true even if we suppose the bird to live until it dies a natural death. Experience shows that birds which make a high fecundity record in the first year of their life, generally speaking, never do so thereafter. In general, an examination of what long period records are available in the statistics of this station, and also in the literature, indicates that probably only relatively few of the American or Asiatic breeds at least, would lay more than 400 to 500 eggs in their natural life time, if they were allowed to live it out. Records of '1000 egg' birds are in existence, but such birds are rare.

An examination of the table in detail indicates that there is no very close or definite relationship between the number of visible oocytes on the ovary and the winter production of a bird. Thus, No. 1367 and No. 3546 each have about the same number of visible oocytes, yet one has a winter production record 18 times as great as the other. Again, No. 71 with the extraordinarily high winter record of 106 eggs, has only a little more than one-half as many visible oocytes as has No. 2067 whose winter production record is only 32 eggs. Again, No. 71 with its 106 record, has very nearly the same oocyte count as No. 8010 with a winter record of zero. In general, it may be said that the present figures give no indication that there is any correlation between actal and 'anatomical' fecundity.

A NEW SPORT.

[Translated from the French]

It happened in a village in the north of Holland, famous for its geese rearing.

At sunrise extraordinary excitement roused the usually calm and peaceful inhabitants.

At a fixed hour the whole population, two winged and two legged, divided into two troops, set out towards a field set apart for the traditional meeting.

In front of each group marched, proud and energetic, the gander (járs) responsible for maintaining the honour of his side in a duel to the death with the champion of the opposing side. He was followed by all his bird-harem, trailing in a serrated troop and urged on by his backers in their Sunday clothes.

The prize of the fight is a "gouden tiendje" (10 florins) without counting the numerous pairs engaged.

At a given signal the two ganders sprang at each other fiercely, attacking with beak and wings; soon feathers flew, and blood ran. The bodies became more and more torn.

The spectators got excited, encouraged their favourite, swore and railed at his adversary, gesticulated, roared, danced, and brought forward more pairs in spite of disputes.

The geese, ranged in a circle, clapped their wings, and screeched, as much interested in the combat as their lords and masters, until after much doubtful success, one of the two fighters remained done and bleeding on the ground, while his adversary very badly knocked-up in spite of his victory returned "cloe-clocking" to the ranks of his flock.

Needless to add, the day ended more noisily and less peaceably than it began, and that the burgomaster, the "rigksveldwachter" and the police found plenty to do before midnight.

THE HASTINGS MECHANICAL DRAFT HATCHERY.

A New Principle as applied to Artificial Incubation.

WITH one exception, namely, what is known as diffusion of heated air, there has been practically no change in principle adopted for incubators since the introduction of the Hydro and the Hearson machines respectively, now more than thirty years ago. Many later incubators are frankly copies or modifications of the Hearson, in which the heat is applied by radiation. Even the mammoth incubators are modifications, save that one heater serves a series of sections. Whether we are now on the eve of great changes remains to be proved, for these appliances have to be submitted to the stern test of general use.

Information has reached us that Mr. Milo Hastings, of New York City, formerly of the Kansas Experiment Station, and latterly of the U.S. Bureau of Agriculture, has invented an apparatus which is really an egg oven, capable of holding, in accordance with the building, anything from 10,000 to a million eggs. This is described as being built, not manufactured. It forms, says the description, a one story structure about one-tenth the size of an incubator cellar or house of similar hatching capacity. This building is of wood, or the outer wall may be of cement, It has the external appearance of an ice house, having vestibuled doors and very few windows. Within this building are a receiving and packing room, an engine and tool room, and the insulated hatchery which is in two or more parts, each having its own heating and fan system. One of these sections is for eggs in the turners, and the other for the trays at hatching time. Between the turners and the hatching cupboards extends a broad aisle in which the attendant works.

The Egg Chamber. [*Copyright.*

A new principle as applied to artificial incubation.

As will be seen by one of the photographic reproductions we are able to give, the eggs are in trays closely stacked at one side of the room. These are 1½ins. high, made in the usual form, and holding 180 eggs, fitting into grooves prepared for their reception. A device is adopted for turning in a wholesale fashion, twenty or thirty of the trays being dealt with at the same time. This arrangement is not very clear to us from the description, nor yet its effectiveness determined, but it is stated that in practical operation only five seconds was required to turn a compartment holding 10,000 eggs.

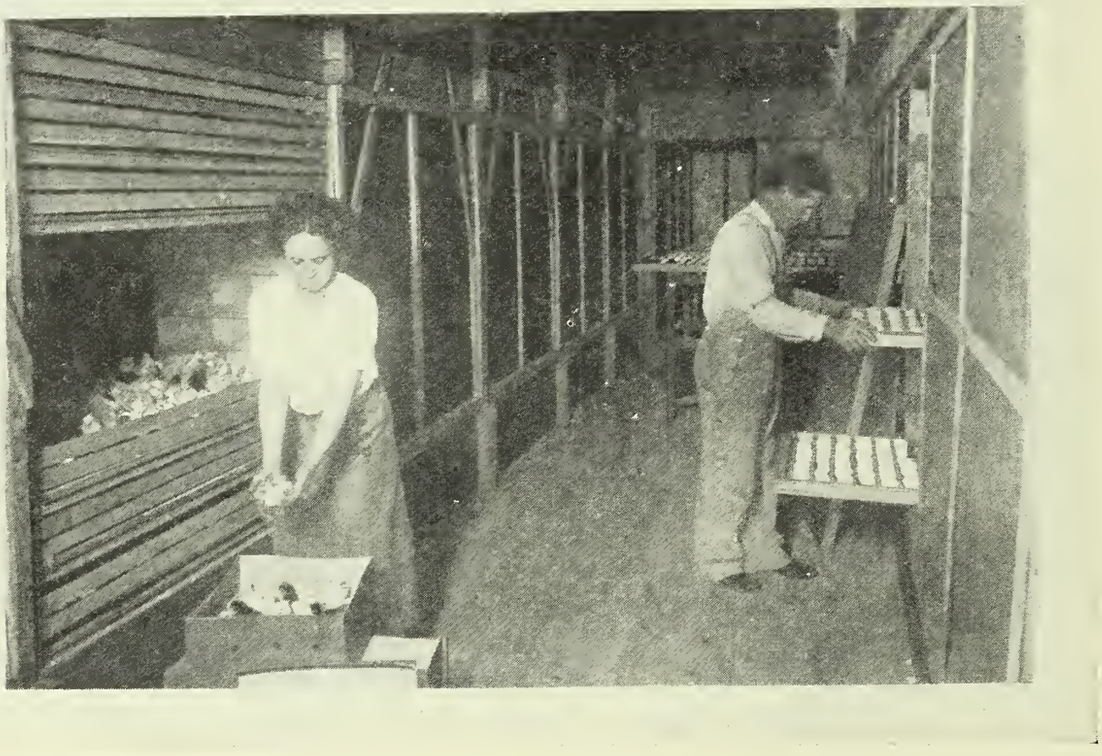
When the incubation period is completed, and the time of hatching has arrived, the eggs

are removed in the trays to sections where they are wider apart, so that the chicks have more space, as shown in another of the illustrations.

So much for the general arrangements. The most prominent feature is the mode of heating. This is by means of mechanical draft, by which fresh heated air is stated to pass regularly through the building, and the claim is made that this secures equal heat throughout with evenness of evaporation, and provision is made that the air shall contain the required amount of moisture. From the description to hand, we learn that in the mechanical draft plant the heater and regulator may be placed at any point in the air circuit. Gas and coal, or coal and gasoline may be used, whichever is the cheaper, and by means of thermostatic controls the temperature is regulated. It is stated that failures in large room hatcheries have been due to inequalities of temperature, and also that, with what is called dead air, it was impossible to keep large quantities of incubating eggs from over-heating in the centre of the mass. In this machine, however, the rapidly moving air is said to be evenly distributed by means of suitable gratings.

So far as capital cost is concerned, the larger the hatchery the smaller the expense per egg capacity, owing to the fact that the mechanical draft machines are expensive. For a building holding 10,000 eggs this works out at £31 5s. per 1,000, but in one holding 100,000 eggs it is only £11 7s. 6d. per 1,000, such calculations including the building as well as machinery and fittings. For instance, an ordinary incubator house to accomodate machines holding 10,000 eggs could not be built under £150, which would only leave £160 5s. for the requisite machines.

All this, however, is subsidiary to the question whether in actual operation this mechanical draft system is practical and successful commercially. As to that we can form no opinion. Such a point can only be proved by actual experience. Mr. Hastings, who is careful to point out that the system is only serviceable for large hatcheries, and useless to the individual farmer, as is the case with Egyptian egg ovens, has had three under trial in different parts of the United States. He records testimonials which show that experienced poultrymen who have seen these are much impressed with the possibilities of the system. How far it can be carried out by general operators has yet to be proved, and we await with great interest actual records as to cost of operation and results in the shape of liveable chickens *pro rata* to the fertile eggs placed therein. A letter written by Mr. P. C. Fish, of Kansas City, is as follows:



Turning the Eggs and collecting the Chickens. [*Copyright*

"I have just spent two days investigating Milo Hasting's 'forced draft' hatching plant at Muskogee, Oklahoma.

"I have inspected the machine thoroughly, made ample tests of the temperature control, candled eggs, taken off hatches, and generally familiarised myself with the machine and its work. I have talked with several of the customers and inspected flocks of growing chicks totalling several thousand.

"My conclusions are that Hastings' plant, though the result of the labour of one man working without efficient help and with very limited means, is already the equal or superior of the mammoth incubators developed at great expense by established incubator firms.

"I have been working on incubation for the past five years. In that time I have tried about forty different incubators. My present plant, with 21,000 capacity, is equipped with two mammoth machines of leading make and a late pattern. I have been hatching about the same grade of eggs as Mr. Hastings—some from the same farm—and he has hatched a larger percentage."

This is excellent up to a point. What we now look for are the figures of an actual operator over a complete hatching season.

The chamber in which the heat is generated which maintains the correct temperature in the egg room. [*Copyright.*

THE TABLE DUCKLING.

IT is not generally known that ducklings for table purposes may be produced very successfully in small runs, for beginners are usually under the impression that to keep ducks profitably one needs a pond and an unlimited range. This is perfectly true with regard to breeding stock, and unless one has suitable accommodation of this description, it will not pay to keep adults for breeding, especially as one can purchase eggs for hatching of large table-breeds kept on farms at a very low rate. Some breeds of ducks, like Indian Runners and Campbells, are excellent layers, but they are too small for the table, and require a free range to give the best results, so that they are not likely to suit the average amateur. On the other hand, ducklings for the table must be kept in confinement from the day they are hatched until they are killed. They should only have sufficient water for drinking purposes, and the small poultry-keeper can turn them out as successfully as the large breeder if he takes the ordinary precautions to assure cleanliness and quick growth.

The Age for Killing.

The life of a table-duckling must necessarily be short, for the quill feathers begin to grow when the birds are nine to twelve weeks old, and when that process commences it is hopeless to try and get

flesh upon the frames. As in the case of table-chickens, there is a period when, feather growth having temporarily ceased, the birds are in fit condition for fattening and killing; but if that period is missed, ducklings must be kept on for another two or three months until, having assumed full plumage, they are again able to put on flesh. As ducks grow a large frame very quickly, and attain from four to four and a half pounds weight in eleven weeks, with good management, it will be understood that it is absolutely necessary to keep a watch upon the feather growth and kill them off before the pin-feathers appear, if they are to prove profitable.

Suitable Breeds.

The best table-breed, on account of its size, quick growth, and colour, is the Aylesbury; but there are some strains of cross-bred Aylesbury-Pekins, combining the properties of good layers and table-birds, that will answer the purpose very well. Coloured ducks, such as Rouens, do not realise such high prices, although they are useful for home consumption. In any case, when buying eggs for hatching, be sure and procure them from large table stock kept on a farm or a good grass range; and the earlier they are procured the better, for during May and June fat ducklings realise high prices, and up to the end of August there is a keen demand in all residential towns and seaside resorts. The eggs take four weeks to hatch, and allowing another eleven weeks for growth, one may estimate the time to procure the eggs so that the birds may be ready when required.

Hatching and Rearing.

A good-sized hen will cover nine or ten duck eggs, and they may be treated in much the same manner as hens' eggs during the hatching period, although if the nest is dry it will be advisable to sprinkle a little lukewarm water over them every day during the last fortnight. When hatched, the hen and her charges may be put into an ordinary coop, and the first feed for the youngsters should consist of chopped hard-boiled eggs mixed with bread-crumbs. After two days the diet may be changed for scalded coarse oatmeal or fine biscuit meal, and within a week a regular diet of soft food may be begun, comprising pea-meal, sharps, barley-meal, and Sussex ground oats. A little cooked lean meat should be provided every day, together with some chopped green-food, and for the first two or three weeks the meals should be given every two hours, whilst both food and water should be served in guarded troughs. Some fine grit should be mixed with the food, and for the first few weeks we find it a good plan to give a little mixed chicken corn for the last feed at night. Ducklings do not require much brooding, unless the weather is very severe. They are hardy creatures, and will get along without the hen when they are three to four weeks old. Up to that time the coop should be moved frequently, but the hen should be kept confined. When, eventually, the ducklings are weaned, they should have a small, well-ventilated house to sleep in at night, unless an outhouse can be made to serve the purpose, and as rats are very often attracted where ducklings are kept, it is advisable to have a boarded floor. At one time we kept ducklings in a pigstye fitted with a door to close at night, but if no such convenience can be found, a wooden house, 6ft. long by 4ft. wide, and 3ft. high at the back, with a sloping roof and adjustable shutter for ventilation in the daytime, will accommodate a dozen birds until they are fit for killing. Larger houses may be provided, according to the number of birds kept, and as many as twenty-five may be run together in one flock. Where a large number of ducklings are bred, it is a good plan to build a range of houses and yards in a sheltered situation. Very little space is necessary in the yard, for table-ducklings do better when they have little or no exercise, and for sanitary reasons it is better to have the surface of gravel or ashes, with good drainage underneath, rather than turf or bare earth. At any rate, the place must be kept clean, and in a gravel run it is an easy matter to cleanse the surface by swilling it, whilst the house should be well bedded with litter, such as straw, dead leaves, or chaff, which should be renewed frequently, so that the place never gets wet and dirty, for, contrary to general belief, ducklings do not thrive in wet and filthy surroundings.

Feeding for Growth and Flesh.

As the birds grow, fewer feeds may be given every day. After the age of three weeks it will be sufficient to feed them every three hours, and by the time they are six weeks old four meals a day will be enough. If there are any household scraps to spare they will be very useful, and can be utilised in much the same way as recommended for poultry, being soaked and mixed up with Sussex ground oats. Animal food is necessary for ducklings, and the best results can be obtained when liberal supplies are given. The best for this purpose is lights or offal, which may be purchased cheaply from a butcher and boiled up as required. The liquid will be found useful for mixing up the soft food, and the meat should be chopped up and given at the rate of a tablespoonful a day for each bird when three weeks old, up to two ounces per day when the birds are eight weeks old and over. The effect of this will not only be to stimulate growth and build up a large frame, but also to promote strength and vigour, and the birds will be in better condition for putting on flesh towards the end. The regular diet from three weeks upwards should consist almost entirely of soft food, but for the sake of variety and to tempt the appetite, changes may be made. Such material as a cooked cereal, which is comparatively cheap, may be used in conjunction with Sussex ground oats, pea-meal, maize-meal, and barley-meal at various periods up to the age of about eight weeks, when it is advisable to concentrate attention on the

fattening foods entirely. These include Sussex ground oats, pea-meal, and maize-meal, and they may be used either separately or together, mixed up if obtainable, with skimmed milk or buttermilk, together with melted fat and scraps of fat and lean. Two or three weeks' heavy feeding on materials of this description will put on the finishing touches, and before the pin-feathers appear the birds should be both large and fat. During all this time the ducklings should have no more water than they require for drinking, and this should be given in guarded troughs, for if it is in open pans the birds will foul it at once. Although the food should be mixed rather soft especially during the later stages, ducks need a good deal of water at feeding times to help them to swallow their food, so that it is advisable to fill up the water troughs before they are fed, even if they have very little during the interval. Too much water has the effect of swilling the food through the system, and it is advisable to bring up the birds from the very first to be satisfied with a moderate quantity.

KILLING.

When the time comes to kill the birds it is necessary to avoid disturbing them. If one or two are required at a time, the best plan is to head them off and drive them out of the yard, instead of driving them into a corner and catching those required, which will have the effect of upsetting the remainder and putting them off their feed for several days. If they must be handled to ascertain the condition it should be done at night. The best way to kill a duckling is to strike it a sharp blow on the head with a stick, and afterwards to sever the main artery by inserting a sharp knife at the joint of the head and neck. Plucking should be done as early as possible, and one will soon see at that time whether the birds have been left a little too long, for the small pin-feathers will cause a great deal of extra trouble if they are already in evidence. In that case the remaining birds of the batch should be killed off at once, for they will certainly lose condition each day they are kept.

A view on one of the largest duck farms in the world. [*Copyright.*

The farm belongs to Mr. Peter Walsh, and is situated at Fleetwood, Lancashire,

AN IMPROVED DUCK HOUSE.

The usual form of duck house has no facilities for easy cleansing, and as it is usual to have a low roof in these buildings, the necessary cleaning out is somewhat troublesome.

The house shown in plan, elevations, section, and in perspective, in the accompanying drawings, suggests a way by which this difficulty may be obviated. It will be seen that the roof and back are both hinged, so that the inside may be entirely cleaned out.

The construction is not more difficult than any other house built in sections, and may be made by anyone who carefully follows the drawings and instructions.

Tongued and grooved matching, $\frac{3}{4}$in. thick, and deal batten 3in. by 1in., form the greater part of the material used.

The Front. This, as will be seen in the front elevation, is 6ft. long and 4ft. 6ins. high. The batten framing is halved together, two uprights 4ft. 6in. have three 3in. and one 2in. wide rails attached. The total length of rails, including the width of the uprights, is 5ft. $8\frac{1}{2}$ins.; this allows the the matching to project $1\frac{3}{4}$in. each end. The bottom rail is 9ins. up, the next rail is 1ft. 6in., measuring from outside to outside, A 3in. rail is halved at the top, and the 2in. rail placed so as to leave a space of 4ins. between it and the one above it. The position of the matching is evident from the drawing, the entrance being cut out 14ins. by 11ins. The openings are covered with wire netting fastened on from the back; the larger openings are fitted with hinged flaps, as indicated in the side elevation. Either cord or chain may be used to adjust the flaps, and cross garnet hinges used for attaching them to the frame.

The Sides. Both sides are alike, total width 3ft. $4\frac{1}{2}$ins., height in front, 4ft. 6in., at the back 2ft. 9ins. The batten framing is composed of two uprights cut to the lengths given, one rail 9ins. up, another one 1ft. 6ins., measured from outside to outside, and the third joining the tops of the uprights, all being 3ins. wide and making the framing 3ft. $4\frac{1}{2}$ins. wide. Matching is nailed on as shown, a slot being subsequently cut out to allow for the batten across the middle of roof.

The Back. First frame up 3in. batten, two uprights 2ft. 9ins., and two rails each 5ft. $8\frac{1}{2}$ins. long one 9ins. up from the bottom and the other at the top. Two boards of matching each 2ft. 9ins. long should be cut off for the ends, and one length 5ft. $4\frac{1}{2}$ins. nailed to the bottom batten.

The opening is filled in with a flap made as indicated in the perspective sketch, 1ft. 9in. lengths of matching are nailed to 5ft. $4\frac{1}{2}$in. lengths of batten, the flap being hinged to the lower rail with cross garnets, the whole thing being kept in place with buttons attached to the side uprights.

The Roof. This is 7ft. long, 4ft. 9in. wide, and formed of 4ft. 9in. lengths of matching nailed to 7ft. lengths of batten, 3ins. wide, one a little away from each end, and a third in the middle. Stout back flap hinges should be used to attach the roof to the front, while the back may be kept in place by means of hooks and eyes, or hasp and padlock.

A suitable roofing felt should be used to cover the matching, five yards being required in all.

Floor. This should be boarded with 1in. floor boards nailed on to the edges of a 3in. by 1in. batten framing, the latter being made to fit inside the house, with the edges of the boards projecting, so that they may rest on the upper edges of the lower rails of the ends, front, and back.

Short lengths of 2in. square material should be nailed inside the inner corners underneath the floor. These make the projecting feet of the house much stronger and less liable to work into soft ground.

A ladder made from floor board should be hinged, or otherwise fastened to the opening in front, and a strut fitted inside the house at the top, to hold the roof up when required. If desired this may be made adjustable so that the roof may be kept open at any required height.

Approximate cost of materials.

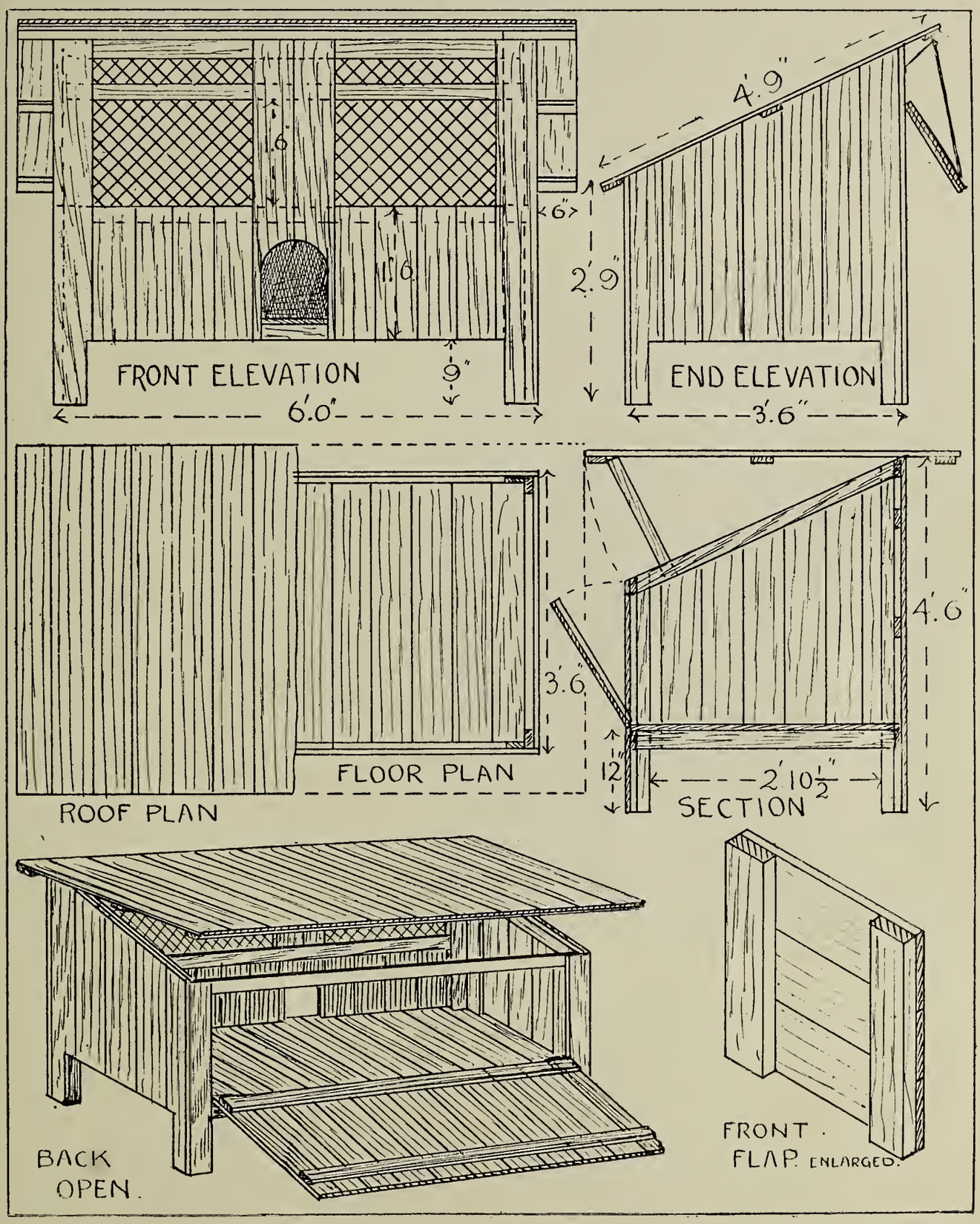
150ft. run deal batten 3in. by 1in. ...	...	6	9
1 square deal matching, $\frac{3}{4}$in.	...	10	0
21 sq. feet floor boarding, 1in. thick	...	3	0
Netting, hinges, felt, paint, and sundries	...	5	3
	£1	5	0

EXPERIMENTAL WORK AT ABERDEEN.

At the last meeting of the Aberdeen College Poultry Committee Mr. G. G. Esslemont, general organiser, submitted a proposal for an experiment in egg production and the proper feeding and management of poultry, so as to provide up-to-date and reliable data on the financial aspect of poultry-keeping in the north of Scotland, and to enable the instructresses to deal more effectively with the aspects of the subject in their lecture courses. Only persons in possession of suitable fowls and houses would be accepted as experimenters, and the number of fowls in each experiment would be limited to 20. The College would provide the concentrated feeds required, and in return, the experimenters would undertake the feeding arrangement as directed by the College and keep a record of the eggs produced and the prices obtained. The experiment would continue for three years at least, and embrace different centres each year. The committee approved of the proposal.

An "abnormal" egg trade.

One effect of the Householders' League in the United States as a protest against high food prices, is to cause large quantities of eggs to be shipped over the border to Canada, in spite of the tax of $1\frac{1}{2}$d. per dozen.



PLAN OF A DUCK HOUSE. (See preceding page) [*Copyright.*

IN-BREEDING AND EGG PRODUCTION.

THE great majority of poultry-breeders, farmers, cottagers, and others practise out-breeding with deliberate intent as a means of improving prolificacy and promoting health. Even the more intelligent, who maintain a stock of pure-bred fowls, secure as large an admixture of blood as possible in their strain by introducing a fresh male year by year. It seems probable, that the present laggard position of the poultry industry is largely due to this mistaken notion of the true principles of stock-breeding.

The Meaning of Strain.

The very foundation of egg-production is strain as distinct from breed; and that is one rock upon which the ignorant founder. The making of strain belongs to the essence of a breeder's skill, but he must not start with unrelated units. Having accepted purity of breed as essential, he must pay primary regard to the antecedents of his foundation stock, and this is of greater importance even than the proved merits of the birds themselves. Thus the 200-egg layer mated at the outset with a cockerel bred from a 200-egg layer but entirely unrelated, would probably produce nothing remarkable. On the other hand, the progeny of the same hen or pullet mated with a first cousin would be calculated at least to maintain, while it might surpass, the quality of the parents. In the one case the desired unit characters would clash, in the other they would blend, or "nick," as the breeder calls it, in a fair proportion.

It is the more strange, this perverse opposition to in-breeding among practical poultrymen, since matings of a more or less incestuous character are regarded as inevitable by fanciers. The latter, in making for any particular point, as comb, colour, or shape, use their material regardless of relationship, and they will without hesitation put a sire to his dam or a brother to sister in blood, though the latter course is not generally approved. Nevertheless, the results, with one provision, are perfectly satisfactory. The provision is that the stock be absolutely sound and healthy, without which safeguards, disaster will inevitably result. The practice can be carried on continuously if necessary, but not indefinitely, for in due course there must come a diminution in size and vitality. Nevertheless, the capable breeder will have made provision for this by an outcross about the third generation, having by now established his point. It may be recognized, however, that the introduction of a new line—always necessary from time to time—is a difficult matter requiring careful execution. The new blood must not at once be allowed to permeate the strain, but should rather be introduced first into a sort of experimental breeding pen, then gradually circulated throughout the family, chiefly in the male line. Even so, there will probably be a check to progress for two or three seasons.

Utility and Fancy.

All this—and it is the greatest thing the fancier can teach the utilitarian—applies equally in principle, if not in degree, to egg production. There must be the same painstaking building up of a laying family step by step, and no deviation from the direct line until necessity compels. Failing stamina can be the only excuse for out-crossing. Then there must always be the closest co-operation between breeding-pen, trap nest, and recording sheet, the last-named being the only true measure of prolificacy. At the same time, however, the practical breeder cannot allow himself to be bound solely by results. There are problems of heredity which no man rightly understands, and one of them concerns the reproductive power of great layers. Many authorities hold that it is not the proper course to breed progressively from the best layers in a flock, but rather to associate their qualities as far as possible with the more robust physique of their blood relations. And so it follows that from the breeder's standpoint the sister of a great layer may be more valuable, being stronger for reproductive purposes, than the record-breaker herself. And here the parallel with fancy stock abruptly ends.

The fancier is striving for a merely artificial point which makes no demands upon the vitality of the subject, whereas the egg producer seeks something which is of the essence of strength itself. A certain amount of latitude can be allowed in the case of a show bird whose atmosphere is to be an easy and and artificial one; not so with a fowl whose primary function is to supply eggs for the farmer and cottager. The same degree of close in-breeding, therefore, cannot be allowed in the second case as in the first, or at any rate it cannot be carried on over so long a period. There can be no question that vitality properly conserved and diverted is the secret of prolificacy, and there can equally be no doubt that injudicious in-breeding is a sure way of imparing vitality.

It is only comparatively recently, however, that poultry breeders have discovered the fallacy and dangerous deception of the expression "like produces like." Any blind interpretation of this supposition would infallibly result in disaster, for it has more than once been shown that the practice of breeding persistently from the best layers leads to gradual deterioration of the strain. In itself we see no harm in breeding from young birds of either sex so long as they are matured, but when it comes to intermating cockerels and pullets, there arises at once the danger of simply propagating fragility.

The Times.

U.S. Export of Eggs.

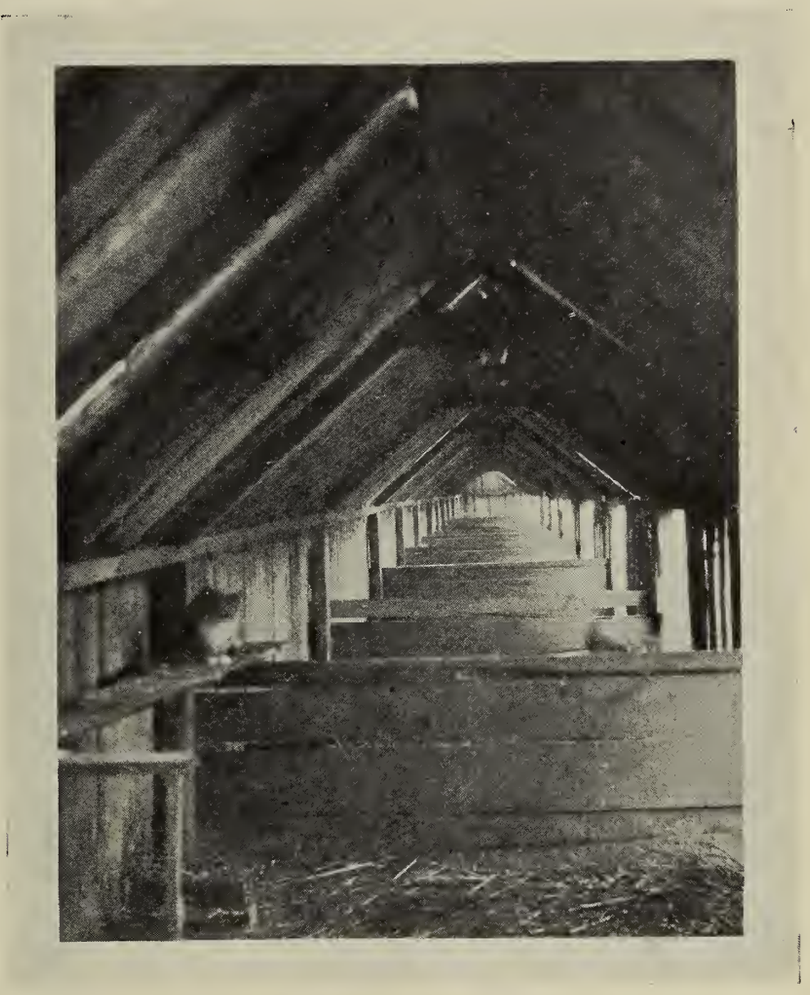
It is reported that in 1911 the United States imported 150,000 great hundreds of eggs, and exported 1,325,000 great hundreds, in value about £600,000.

STOCK DUCKS AND THEIR MANAGEMENT.

WHILE the keeping of poultry has increased enormously during the last few years, it cannot be claimed that duck-breeding has developed to the same extent. Why this is so is rather difficult to explain, since duck-breeding, when conducted on the right lines, is undoubtedly one of the most profitable branches of poultry-keeping, as the demand for early ducklings at good prices is well maintained. It is very often thought that it is only possible, under certain conditions, to be successful in breeding and rearing ducklings, and this idea deters many from taking up this work. Certainly the general conditions are factors not to be altogether disregarded; for instance, ducklings grow much more rapidly when reared on high gravelly soil than those kept on swampy, undrained land.

On most farms a few ducks are kept, which are sold at any time of the year at prices ranging from two shillings and sixpence to three shillings each. This leaves a very small margin for profit; since ducks are very gross feeders. Unless they are ready for market when in their duckling feathers, some months must elapse before they are again in the same edible condition; therefore the crucial point is to get ducklings ready for killing at nine or ten weeks old, and this stage must be attained early in the year, when prices rule highest. To achieve this, eggs must be obtained in sufficient time to allow hatching to commence in October. This is not always easy of accomplishment; in fact, it is a very difficult matter, unless the previous management has been directed towards laying the foundation for the autumn and early winter supply of eggs. Young ducklings must be relied upon for this supply, as they commence to lay earlier than will those that were hatched during the previous year. Undoubtedly February-hatched ducks are the most reliable, and when those are mated with two-year-old drakes, there is small danger of weakness in the progeny, since age is possessed by one parent. The ducks selected for breeding purposes should be large and from good parent stock, with no sign of hereditary disease or other weakness. Their early treatment should be all in the direction of building up a large frame and good constitution, and the food should be of a nature that will store up stamina, so that when their time arrives for breeding they are able to bear the strain. It is frequently imagined that any kind of food will do for ducks, and cases may be found where they are fed with the "swill" provided for the pigs. This is quite a mistaken idea, as sound, nutritious food is quite as necessary for ducks as for any other kind of poultry. Nothing of a fattening nature should be given, since grossly fattened specimens are very rarely good breeders.

Where the object is the production of early spring ducklings, Aylesbury, or Pekin pure, or a cross between the two are undoubtedly the best for the purpose. They should be mated early in September,



A Duckling Brooder House in Holland. [*Copyright.*

running one drake with three ducks, and the eggs are generally fertile after the first ten or twelve, although they should be tested from time to time, and, if not satisfactory, two drakes may be run with five ducks. Access to water is necessary for the breeding stock. This not only assists fertility but strengthens the young ducklings. A large pond, or running stream, is not absolutely necessary, as, so far as the actual swimming is concerned, a tank sunk in the ground, or any form of artificial bath will answer the purpose; although under these conditions no natural food is to be obtained, and consequently more food has to be supplied. Ducks are excellent foragers, and where they are fortunate enough to have a farm, village green, or garden to

roam over, they will obtain much in the way of worms, grubs, etc., which are helpful in maintaining health and vigour in breeding stock.

After mating, the feeding of ducks is of the utmost importance, since all else is in vain if the eggs are not produced at the right time, and everything must be done that will assist to this end. A good plain diet, strong in nitrogenous matter, is necessary. Food very largely governs both the quality and number of eggs produced. The soft food, which should be given as early as possible after daylight, may consist of barley-meal and middlings, with the addition of meat scraps of almost any description, provided that the meat is fresh and well boiled, and given in small quantities. Butchers' offal—lean meat being preferable—horseflesh, or anything else of a like nature are all excellent for ducks, being strong in the elements mostly needed for the production of eggs. For the evening meal there is nothing better than oats, wheat, or barley. When the birds are at liberty they can usually obtain all the green food that is necessary, but when the space is limited, vegetables should be supplied. Cabbages, lettuces, dandelion, turnip-tops, or anything of the sort will have a cooling influence, and tend to keep the ducks in perfect health.

It is frequently claimed that ducks are so extremely hardy that little or no housing is required. This, however, is quite a mistaken idea. What is suitable for the wild duck would be absolutely fatal for those under domestication. They do not in any way differ from hens so far as comfortable and sanitary sleeping quarters are concerned. The form of house, however, need not, perhaps, be of the same expensive description. Almost any kind of outbuilding can be utilised so long as it is weatherproof. If no buildings of this kind are available, or for those who prefer to make their own houses, it is a very easy matter. A duck-house need not be high, three feet being quite sufficient, provided that the floor space is ample, say, three square feet per bird. The floor should be raised about two inches above the earth, and made moveable so as to facilitate cleanliness. The house should be bedded out with chopped straw, chaff, or peat moss litter. Whatever sort of bedding is used, it is most important that it be regularly raked over and frequently renewed; inattention to this is a fruitful cause of disease, for ducks very soon become contaminated, hence the necessity for perfect cleanliness.

During the time that the eggs are required for hatching, the ducks should not be unduly disturbed nor moved from one place to another, as this tends to retard laying. Success, or otherwise, in rearing spring ducklings very largely depends upon the method of management of the parent stock.

Australian Turkeys.

Evidently we cannot look to Australia for Turkeys to meet English requirements. In Sydney the average price last December was 1s. 1d. per pound, live weight.

CAUSES OF INFERTILE EGGS.

IT may appear somewhat early to speak on a subject that is felt most acutely in the breeding season, when complaints come regularly to hand, and the causes are discussed. It is, however, an appropriate time to try and prevent some of the prevailing causes. Probably one of the most common is inattention during the winter months, in the care of those destined to be future breeders. By now the majority of the most likely pullets that are intended for use next spring will have been selected, and, if the males have not been actually secured, the source whence they are to come will be known and an eye kept upon intended purchases. This is done by those who grasp the importance of being in sufficient time. But there are many poultry-keepers who are prone to procrastinate in their selection of pullets and the purchase of males until too late. Thus the number of cockerels from which to choose is considerably lessened, since the more providential section of buyers have already had their pick, probably two or three months in advance, and they have very naturally selected those that were hatched early in the year, and are consequently well matured and have the needed stamina for stock purposes, early in the following season.

I do not deny that the man who buys his cockerels in January or February may get, to all appearances, an excellent type of bird, but it is very difficult even to the most experienced to detect just when he was hatched. He may have been hatched in May or even June, and a month or two in this respect is a most important factor in determining the question of fertility. Breeding from immature stock is doubtless responsible to a very great extent for a large proportion of the infertile eggs of which complaints are annually made. To guard against this cause is within the reach of every poultry-keeper. Without delay take steps to secure male birds, since at the present time it is an easy matter to foretell their age pretty accurately. Once having selected the males, they should be kept under good healthy conditions, with plenty of exercise; they must, however, be so far under control that they cannot approach the hens.

The hens should undergo the same rigid attention, and selection should be made of those intended for stock purposes before they commence to lay; if conditions will allow of their removal from the general flock, it will be a distinct advantage. While one should aim at having the general flock laying by the beginning of November, no attempt should be made to force the selected breeders. It is invariably found that those pullets which have steadily and consistently laid throughout the winter are not in the same condition for breeding in the spring as are those whose strength and vitality have been reserved for the specific purpose for which they are intended. To place them on the stubbles, and then, as a further change, on to ploughed land, will be conducive not only to fertility, but to the

securing of strong germs and robust chickens. Neither of the sexes should, however, be unduly exposed during a severe winter, but rather should they be brought near to the homestead for warmth and shelter. It is necessary, although seldom recognised, that hens should have their strength preserved for the breeding-time, since they are liable to exhaustion equally with the male.

A further advantage in securing the male bird several months before his services are required is that he becomes accustomed to his changed conditions, and gets acclimatised. This is much easier of accomplishment before than after mating, and there is considerably less danger of the male going wrong, which not infrequently happens, within a week or ten days, when he is brought from a distance and introduced directly into the breeding-pen. Sometimes his weakness is not sufficiently apparent to warrant his removal, but the periodical testing of the eggs from the hens under his control will reveal his incapacity for the work of fertilisation. The time of year when the birds are mated must depend entirely upon the object that the owner has in view. But whether he be fancier, or a specialist in early marketing, or the ordinary poultry-keeper who does nothing out of the usual routine, it is equally important for him to mate in sufficient time for the pullets to grow accustomed to the companionship of a male, and to know whether the birds harmonise, as a change, or maybe several, will be necessary before the mating is quite correct.

Inbreeding is doubtless also a cause of sterility—that is, mating birds that are themselves the product of closely-related parents. A weakness is usually found in some direction, which may take the form of barren eggs. Whether inbreeding is prejudicial depends upon the experience of the owner. A fancier, to retain or confirm a certain characteristic, may inbreed; in fact, frequently it is absolutely necessary that he should do so to secure his desired end. But it must be remembered that he can inbreed with a much greater degree of safety than can he who does not understand the question of consanguinity—how far it may go, and what the relationship may be, so that injury to the chickens will not ensue. I refer principally to the farmer and other classes of poultry-keepers, who give small attention to these matters, and who, without the least compunction, indiscriminately inbreed for generation after generation, then complain of the sterility of their eggs and the delicacy of the chickens they do succeed in getting. Selection of good, healthy parents, fully matured, strong, and not inbred, together with the conservation of the breeding powers of both sexes until the proper time arrives, will go far to ensure fertility.

A common cause of infertility is that of mating immature stock. This is responsible not only for a large percentage of eggs being infertile, but also for "dead in the shell" and weakly chickens. When year-old birds on both sides are used, it should only be in the case of the non-sitting breeds, and only then when the chickens are to be hatched towards the end of the breeding season. It is desirable to have age on the side of one of the parents, and, for preference, two-year-old hens mated with a year-old cockerel should be used. A cockerel may, however, be chosen, but frequently he is one which was not hatched sufficiently early the previous year, and whenever possible, this should be guarded against. The number of hens to be run

Turning the eggs in the Hastings Mechanical Draft Hatchery. (See page 259). [*Copyright.*

with males of the different varieties can only be definitely settled by experience, since strains, as well as breeds, vary considerably in their capacity in this direction.

The main point for the poultry-keeper's *immediate* attention, if he wishes to save himself annoyance and delay in his operations next season, is to preserve the stamina of the birds that compose the breeding-pen. This is of the utmost importance, and if it is neglected, all other observances will be of small avail. Many breeders devote all their care and attention to the males, but it is not so generally understood that the pullets must receive the same care and attention, and their strength must not be overtaxed. With the approach of cold weather the

birds of both sexes should be well housed and given plenty of shelter. The food should be of a strengthening nature; at the same time over-stimulation should be avoided. Pullets which have not been forced to lay, and have slowly grown to maturity are the most suitable breeders. They must, too, be in good health, and this is at once apparent by their appearance—a red and full comb, bright eye, great activity, good appetite, close and tight in feather. These are all unmistakable signs of condition, and if the male has been kept from all sexual intercourse, and is in the same state of health as the pullets, no tonic nor stimulating foods of any description are necessary. In fact, the birds are much better without them. The food, if of the right kind, will fully supply, in a natural way, all that is claimed for the stimulant. After trying many different mixtures and all the grains used as regular foods, we have invariably found that we achieved greater success in the percentage of fertile eggs by giving for the morning food, bean meal, barley meal, and middlings, and three mornings a week, including with the foregoing, a little Indian meal. In the evening, as whole grain, it will be found that wheat and oats, varied by barley, contains the ratio to be aimed at to increase fertility. Green food, either raw or cooked, must be given daily, and about a fortnight before mating, some form of animal food will be found of service. This however, should only be used sparingly. How much to be given depends entirely upon the conditions of the run; that is, whether the birds are in confinement or have access to the open fields. This will not only maintain but increase vigour, which is so necessary in both sexes if the eggs are to be fertile.

Poultry Records in Various Centres.

In Part V. of the Agricultural Statistics for 1911, recently issued by the Board of Agriculture and Fisheries, are given records of the number of poultry in some British Possessions and foreign countries, which, whilst incomplete, are of interest. These are as follows:—

British Possessions.

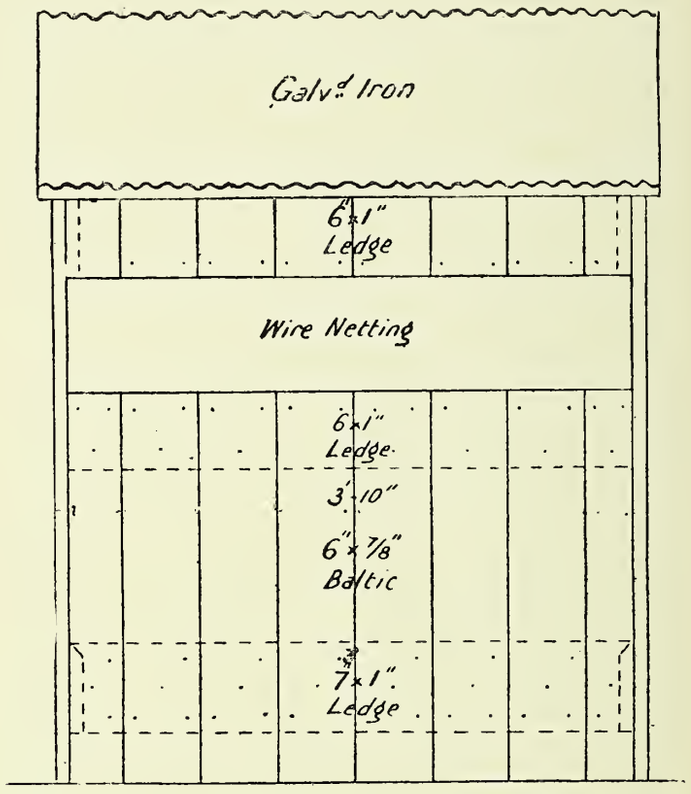
Western Australia (1910-11)	837,337
Province of Ontario, Canada (1911) ...	12,942,293
(Turkeys 638,943, Geese 365,876, Fowls	11,937,474)
Province of Quebec, Canada (1907) ...	4,342,241
,, Saskatchewan, Canada (1911)	4,643,858
Union of South Africa (1909-10) ...	1,057,588

Foreign Countries.

Argentina (1908)	16,721,180
Austria (1910)	35,981,229
Bulgaria (1905)	6,408,252
Denmark (1909)	12,772,763
Luxemburg (1907)	373,765
Finland (1907)	603,593
Sweden (1910)	3,924,390

A CHEAP AND SIMPLE POULTRY HOUSE.

We give here plans of a cheap and simple house for laying hens, made of 6in. by $\frac{7}{8}$in. tongued and grooved Baltic pine, 5 feet 6 inches long, and 3 feet 10 inches wide. The width of 3 feet 10 inches is fixed upon, so that two sheets of corrugated galvanized iron will cover the roof without any patching or joining. This house will be found thoroughly comfortable, being well built with tongued and grooved stuff, leaving no cracks or crevices for the wind and rain to come through. Proper ventilation is provided for by a strip of



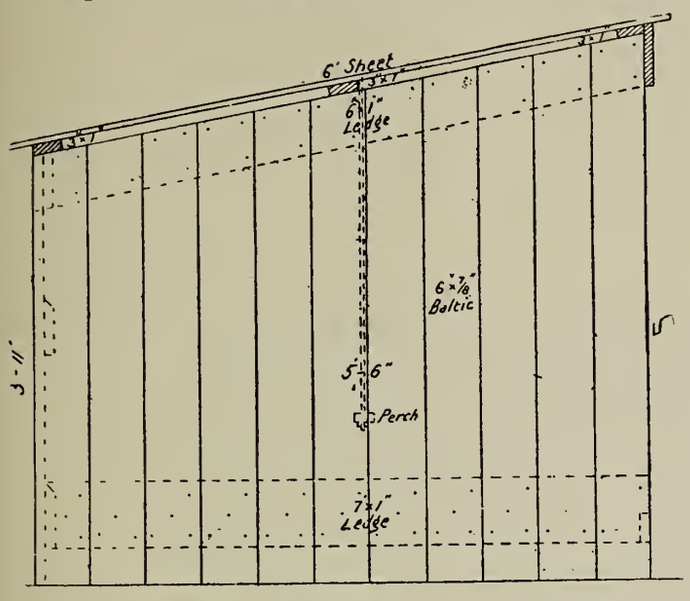
Plan of a simple Poultry House. [*Copyright.*

wire-netting well up the back of the house, and the front is completely open, doing away with an expensive item in the construction of hen houses, viz., the door, which is the first portion to require renewing. With a single roost, a 3in. by 1in. batten, with the top corners rounded off, six hens can be housed, and with two roosts double the number.

As will be seen from the drawing, the roost is swung from the roof and placed about the middle of the building, five boards being in front and six behind. This is for the accommodation of six hens. If double the number are to be housed, it would be as well to bring the roost up behind the fourth board, and place the second roost behind the eighth board.

These houses can be moved at any time by one man, and it is a very good idea to move them back

in the pen occasionally, only just their own length.



End View. [*Copyright.*

"Move them back" is said advisedly, so as to allow the sun to sweeten the ground in front of the house, which would be the old floor.

Poultry Politics in South Africa.

Evidently the Natalians are Home Rulers! The poultry club of that Colony has by a large majority, decided to withdraw from the South African Poultry Association because the latter, in disqualifying an exhibitor for faking, is thought to have exceeded its powers and ignored the rights of the local club.

Dr. Arthur Little.

The South African newspapers in announcing our "Croad Langshan" friend, who is now connected with the Grootfontein Agricultural College, designate him as "Dr." Whether this is merely a piece of journalese like the peppering of the appelation "Professor," we do not know. In any case we are glad to know that his work is being appreciated.

6,400 Fowls per acre.

We are getting on with a vengeance. Mr. F. E. A. Gordon has been lecturing in Sydney, New South Wales, and stated that by his "system" he can keep 6,400 fowls per acre. No wonder it is patented. Probably it is a question of sky scrapers. It is claimed that a lady could easily manage 8,000 to 10,000 hens.

A Hint to Y.M.C.A.'s.

The *American Poultry World* says that the Y.M.C.A., of Mansfield, Ohio, has commenced evening classes for the teaching of poultry culture, in which Mr. S. T. Campbell, Sec. of the American Poultry Association, is one of the instructors.

A STATE GOVERNOR'S POULTRY EXPERIENCES.

The proceedings of the Nashville meetings of the American Poultry Association recently published, include the address of welcome given by Governor Ben W. Hooker, of Tennessee, from which we cull the following items:—

"I went into a restaurant down here in town day before yesterday, and I got one of those stereotyped, ready-made, cheap thirty-five cent. lunches that a fellow looks like he ought to begin to take just before he enters on a political campaign, and I was surprised to notice when the lunch was brought in—I did not pay very particular attention to it or the menu card—that they had chicken soup, chicken sandwich, chicken salad, and stuffed eggs, all at one time. Then I knew they were getting ready for the American Poultry Association."

* * * *

"I have a fellow feeling for anybody interested in the poultry business, not because in recent years I have been very much personally interested in it, but because I spent about five years of my life, back when I was a bare-footed boy in East Tennessee in raising chickens. I would not dignify it by the name of breeding poultry. I did'nt pretend to raise any fancy breed of poultry, but just raised chickens, that was all. Yes, sir, these old fashioned kind, one that can chase a bug half-way across the Desert of Sahara, and will come to some convenient oasis and get back in time to go to roost. I was not blessed with any of the modern equipment with which you people are supplied in this day and time. The only thing I did that other folks did'nt do, so far as I can remember, was to take all the little chickens away from their mothers as soon as they were hatched, and become the stepmother of them myself. I can remember being the stepmother to as many as five or six hundred chickens at one time, and while I was engaged in that business I studied chickens at close range.

* * * *

"There is a whole lot of human nature in a chicken, or a whole lot of chicken nature in a human, I don't know which. I have seen the hen that lays the eggs, set on them for three weeks, hatched them out, feed the little chickens from early morning until night, struggle hard to raise them and keep them going until they could take care of themselves, and I have seen the 'Brigham Young' of the barn yard stand around in lordly style, ornamental but not very useful, and then when he occasionally took a spurt of diligence and found a worm under a chip that perhaps he accidentally knocked over, I have seen him stand and call every hen and every young broiler, and every fuzzy little chicken in the barn yard, and swallow the worm just as they all got assembled around him. I have seen the hen do all the work, absolutely everything that was of any use to themselves or to mankind, the roosters doing all the crowing, and all the voting, you might say. Now, have you ever seen anything like that in the human family?"

FANCIERS AND FANCY MATTERS.

By William W. Broomhead.

The Duck Fancy.

Although the number of people who keep and exhibit waterfowl is nothing like so great as that of those who go in for land fowls—cocks and hens as we know them—there is no question that the duck Fancy is a considerable one, and a more important branch than it used to be a few years ago. At one time there appears to have been a notion that, certain breeds being indigenous to certain parts of the country, they could be reared successfully only in their own district. Some colour was certainly given to this supposition by the fact that the most successful Aylesburys were invariably exhibited by those fanciers who resided in or in close proximity to the old Buckinghamshire market town from which this famous breed of white ducks derived its name. Moreover it was stated—and there were many people who believed it—that there was something about the nature of the soil and the water in the Vale of Aylesbury which could not be obtained in any other part of the country. How fallacious was the notion was fully demonstrated by the introduction of the modern Aylesbury, the stamp that always wins at the shows now-a-days. This new type was brought out by a fancier residing in Berwickshire, and it completely revolutionised the duck Fancy. When once it became established—which it did in a season—there was no looking back. Even the old duck specialists of the Vale of Aylesbury gradually came into line, and they are now among those in the very front rank.

Maybe this breaking away from old ideas gave the exhibition duck world the fillip it required, and I cannot help thinking that the spread of the duck Fancy dates from that time. Prior to then those who kept this class of waterfowl had been content to go along on the lines of their forefathers; but when once it was found that there was something more than were market or stock value in the birds, other fanciers were not slow to go in for them. It cannot be said that many new breeds have been brought out; but among those which have been made during the past few years are the Orpington, the Khaki-Campbell, and the Coaley Fawn, while the Indian Runner has been brought prominently to the front, and improved types of the Pekin, the Rouen, and other breeds are noticeable. Of the former the Orpington, in two varieties, viz., Buff and Blue, is the most popular, and seldom do classes for this breed fail to fill when it is specially catered for at the shows. The Khaki-Campbell was considered as a somewhat local breed, and there were many fanciers who had no idea of the desired colour and markings. It was, therefore, a decided pleasure to find two well-filled classes for the breed at the Crystal Palace show last year, and the innovation will doubtless prove beneficial. The Coaley Fawn is, I believe, a purely utility kind, and so far it has not been my pleasure to see any specimens of it at the shows. The Indian Runner is certainly forging ahead, and I hear excellent accounts of the more recent white variety. The Rouen, too, is a popular kind, despite the fact that it is possibly the most difficult breed of waterfowl to get right for show requirements. Aylesburys are perhaps being kept in too few hands, and the same applies to Pekins; but it cannot be said that they are losing ground. The Cayuga Fancy is a small but select one, and so is the Black East Indian, while the admirers of crested ducks have not increased very rapidly of late.

In the matter of specialist clubs, the duck Fancy may be said to be fairly well off. There is the Waterfowl Club—which, of course, embraces geese—catering for practically every variety, of which Mr. W. G. Kingwell, Dartmoor Poultry Farm, Great Aish, South Brent, South Devon, is the hon. secretary. Of the single-breed clubs there are the Indian Runner (hon. secretary, Mr. J. W. Walton, 22, High St., Tow Law, Co. Durham) which now, I believe, caters for more than the old fawn-and-white variety; and the Orpington (hon. secretary, Mr. A. E. Brown, Staplehurst Poultry Farm, Staplehurst, Kent) which fosters the Buff and Blue. The Crested Duck Club (hon. secretary, Mr. R. Scott Miller, Green Oak Hill, Broomhouse, near Glasgow) encourages crested ducks only, hence it is not a single-breed club, because this peculiar sport—at least, so I consider the head adornment—has been seen in Pekins, Aylesburys, Rouen, Cayugas and other kinds. Perhaps there is room for more specialist clubs in the duck Fancy, but it is questionable if they could do more good for the breeds than those which have been already mentioned.

Some Duck Fanciers.

Although it may appear strange, it is nevertheless true that there are comparatively few all round duck fanciers, that is, those who specialise in and are successful with more than one breed. As a matter of fact the names of only two occur to me as I write, viz., the hon. secretary of the Waterfowl Club, and Messrs. J. Huntly & Son. Mr. Kingwell goes in for Rouen, Indian Runners, Blue Forests (of Belgian extraction, I think) and Buff Orpingtons, while Messrs. Huntly & Son specialise in Aylesburys, Rouen, and Buff Orpingtons. It is many years now since I first met the head of this noted firm, the genial "Jimmy," and that was when he was breeding the famous modern Aylesburys for Mr. J. Gillies at Chirnside. What a rare yard that was, to be sure. Better laid-out duck pens I have never seen, so beautifully situated as they were on the

banks of a mill stream off the Whiteadder. Mr. Gillies's mill was the next up-stream to that at which I have spent many a peaceful day's change in one of the quietest spots in this country. When Mr. Gillies gave up the Fancy—a pity he did, too—Mr. Huntly went on as manager to the Countess of Home; but he has now settled down on his own account, breeding ducks and going in for poultry farming generally at the Hirsel Poultry Farm, Coldstream, N.B.

BUFF ORPINGTON DUCK AND DRAKE. [*Copyright.*
The property of Mr. Holmes Hunt.

When one thinks of single breed specialists in the duck Fancy, many names come to mind. Thus in Indian Runners those of Mr. Joseph Donald (Wigton, Cumberland), Mr. Matthew Smith (Holywood, Dumfries) Mr. John Smith (Kirkmahoe, Dumfries, and not altogether unknown in Scotch Grey circles, too), and Mr. George Cawing (Calne, Wilts) in addition to Mr. J. W. Walton, stand out prominently. Among Orpington fanciers there are Mr. Art. C. Gilbert (Swanley, Kent), Messrs. Gwyther Bros. (Almeley, Hereford), Messrs. Brown & Heath (Staplehurst, Kent), Messrs. William Cook & Sons (St. Mary Cray, Kent), and Messrs. William H. Cook, Ltd. (Orpington, Kent). Of Rouen specialists there are Messrs. J. Brennand (Baldersley, Yorks), Ralph Alty (Mawdesley, Ormskirk), William Bygott, (Wing, Rutland), F. W. Myhill (Hethel, Norwich) and Richard Mercer (Halewood, Liverpool). In Aylesbury circles the best-known exhibitors are probably Mrs. W. Sutcliffe (Burnley, Lancs.), Messrs. J. Y. Wheatley (Bolton Percy, R.S.O., Yorks), and James Longson & Sons (Chapel-en-le-Frith, Derby), as well as those already mentioned. Messrs. J. Y. Wheatley, William Bygott, and J. Longson & Sons are also to the fore with Pekins, and in addition there is Mr. R. C. P. Bradshaw (Tinwell, Stamford) who came near to sweeping the decks with the breed at the club show (Crystal Palace) last year.

Dr. A. Barry Sykes (Formby, Lancs.), Col. R. S. Williamson (The Grange, Hednesford) the famous Black Cochin breeder, and Mr. Harold Carrie (Eastleigh, Hants) also successful with three or four varieties of Orpington fowls, are among the foremost exhibitors of Cayugas. The two

former fanciers can generally stage a grand Black East Indian or two, as can Mr. Walter D. Trickett (Waterfoot, near Manchester), who is chiefly, I believe, an exhibitor of purely ornamental waterfowl. Of the Khaki-Campbell, the originator Mrs. A. Campbell (Dursley, Glos.), so well known as an exhibitor of Brahma and Silkie fowls, has the best stock, but other names among those showing the breed are Miss D. Balquy, Miss R. Baines, Capt. Fred J. Grieves, and Messrs. J. Popple, J. W. Gambrill, Herbert P. Mullens, and A. M. Jameson. Most of the foregoing fanciers are exhibitors of waterfowl only, while some go in for other branches of poultry as well; and this latter is particularly the case with the names I have mentioned in connexion with the Orpington duck, since the whole of them are well-known breeders of Orpington fowls.

Hatching Results.

From accounts of hatching results to hand, the season is promising well. The weather in some parts of the country has not been of the best, in fact, as one fancier says, it has been dead against chicken rearing. Nevertheless, eggs are proving plentiful and the percentage of fertility is very high. The chickens, so far, have hatched out well, and are strong; but the continuous wet and sunless weather will probably tell its tale. A few days of fine and dry weather would no doubt be beneficial. From Lancashire one fancier reports the conditions as anything but good—rain, snow, hail continuously, with frosty nights; but eggs have proved exceptionally fertile, while the chicks which are out are doing well. Another, from Gloucester, complains that the breeding hens might lay better, but blames the wet weather for it. A third, from Derbyshire, says he has never experienced worse weather for chicken rearing than that of last month and January, but the chickens stand it well. From Westmorland one writes that in early January, owing to the continuous rain and cold winds the eggs were somewhat unfertile, but with the advancing season this has been largely corrected, eggs coming in fairly well and now producing very strong chickens; but, he concludes, "we are anxiously waiting for the ground to become drier, since for some time it has been one great squash." Not all fanciers, however, aim at producing very early chickens. Some seldom put down any eggs until February, as they find with the heavy breeds that if they do so earlier the results are generally disappointing; and others get the bulk of their chickens in March and April, the natural months. Early January chicks, of course, may come along well enough for the early summer shows, but, as a rule, they do not last out the year. However, there should be a good selection for the first events of the show season, as good reports are to hand from all parts of the country.

Orpington News.

In connexion with my brief review of the breeds in 1912, which appeared in the January issue of the Illustrated Poultry Record, I have a letter from the originator of the Red Orpington, complaining of my curtailed remark concerning his variety. I said, "The Red—the most that can be said of it is that it is still in the making." Mr. W. Holmes Hunt assures me that the improvement in the variety is most marked, and that the Reds of 1912 were decidedly better than those exhibited the previous year. I do not feel justified in altering my original statement, viz., that the variety is still in the making. I am, of course, very pleased to hear that Mr. Hunt's efforts are not in vain, and that the Red—of which he has the honour of being the originator—is showing so much improvement. All the greater pity, therefore, that those which I had to adjudicate on at the Crystal Palace Show last year did not strike me as being a fixed lot. However, I hope Mr. Holmes Hunt will breed such a fine crop of chickens this season, that when I see them at the Palace in the back end, I will be able to say that, now indeed is the Red Orpington nearing perfection.

I see that some folk are enquiring the whereabouts of the White Orpington Club. That is the worst of the poultry Fancy, there are always some people who will never let a sleeping dog lie. If the club wishes to rest on its laurels why should it not be allowed to repose in peace? I see that one writer terms it a "one-man club"; but, that if be the case, it is entirely the fault of the members—they should see that the affairs are not allowed to drop into such an undesirable condition. Now, as a matter of fact, the White Orpington Club has never had a great deal of life in it. This is not a stray shot, but a clean statement after looking up its records. Just who is to blame does not alter the fact. Of course, there is this excuse: the variety is such a popular one that it may not require any boosting. There is a saying that a good thing recommends itself; which is true enough—up to a point. Nevertheless there are so many good breeds and clubs in the poultry Fancy to-day that competition has never been keener; so, unless there is plenty of advertising, plenty of life and enthusiasm in a club, even the best may go to the wall. I hope, therefore, that the White Orpington fanciers this year will make an extra effort to set their house in order.

On the other hand, it is very pleasing to hear that most of the remaining Orpington Clubs are going strong. Very little, indeed, is heard of the Spangled and the Jubilee, and if something is not done, and done quickly, to give them a fillip they will probably die for the want of an effort. However, the Buff Club continues to make friends and keep right on top. The Black is once more gaining ground, and if I mistake not there will be a right good boom in the variety this season. The Cuckoo and Blue Club has shown that it is fit, and means to remain so, although I should greatly like to see the Cuckoo get a move on. And the Variety, the good old V.O.C., has never been in a more flourishing condition than it is this year, and thanks

largely to its energetic hon. secretary, who never fails to call a meeting—and get a notice or two in the Press—when anything is toward. It is, after all, well for the White Orpington that it has a club, and an older one than the single-variety club, to look after its interests ; and well perhaps, too, for the Jubilee and the Spangled, since the V.O.C. caters solely for these three.

EARLY TREATMENT OF DUCKLINGS.

IT is a well-known fact, and one applicable to all animals and birds whether they be for exhibition or utility, that it is their early treatment that is principally responsible for their future success. Probably this applies more particularly to ducks than to any other stock. The reason for this is two-fold. In the first place, the future success with ducklings means their being ready for market at eight or nine weeks old. To accomplish this, it is imperative that the young ones shall be kept growing from the first day, which progress must be maintained right up to the time of killing. In the second place, it is equally important that the ducklings hatched in February and March, the ones that are intended for stock purposes later in the year, shall be well managed in their early days if they are to be in breeding condition the same year as they themselves were hatched.

When the ducklings are hatched, which is usually done by hens, they should be removed to a spacious coop, and at the end of about twenty-four to thirty hours they may have their first feed. This should consist of hard-boiled eggs, chopped finely, and mixed with boiled rice and middlings. The egg food need only be used for three or four days, at the end of which time it may be entirely dispensed with. At the same time, if eggs are available they may be employed with advantage. Boiled rice is probably one of the most valuable of foods for ducklings, since the object is to add as much flesh as possible with a small amount of bone. Boiled rice is not, however, to be recommended for ducklings that are to be kept for breeding stock, at least not in their early stages, since a large and well-grown frame is required, which cannot be built up from a food so lacking in bone-making elements as is rice. Consequently they must first get the bone which may be covered with flesh when required. Therefore feeding must be different from that fed to market ducklings.

Oatmeal made with milk into a stiff porridge is doubtless the best of all foods as a frame builder. It is, however, an expensive food when used alone, but it may be varied with middlings and barley meal, which will reduce the cost of feeding. When the ducklings are intended for either market or for the breeding pen, it is necessary that they should have an occasional feed in which bran forms a part. The value of bran for ducklings cannot be overestimated, for it regulates the bowels, and prevents the tendency to constipation which is so common among young ducklings.

When birds that are intended for consumption have reached about four or five weeks of age the rice may be varied by ground oats, maize meal, and fine sharps. The most promising young ones that have been selected for breeding purposes should from the fourth or fifth week be given whole oats, small wheat, or barley, which should be boiled or thoroughly soaked in hot water mixed with meal, among which may also be mixed a little boiled rice. During the whole process of rearing both stock ducks and those for consumption it is highly important that they be regularly supplied with green food. Drinking water should be given to those being fattened, but they must not be allowed to swim. This would retard the process of preparation by several weeks. On the other hand, those to be reared to adulthood should be allowed to swim from the commencement of their career. The value of this will be seen in the hardihood of the ducklings that will eventually be produced. When about nine or ten days old ducklings require little in the way of brooding, and if put into a roomy coop or crate they will do well by themselves. It is, however, very necessary that their sleeping place be thickly bedded with straw or other form of clean litter.

Loss of Moisture in Eggs.

Mr. A. D. Greenlee, writing in the *Journal of the American Chemical Society*, makes what appears to be a most interesting discovery, namely, that the loss of moisture in an egg undergoing the process of incubation is not wholly by evaporation through the shell, but by absorption by the yolk. He says: "The yolk, which contains a very high percentage of solids, is surrounded by a membraneous tissue called the vitellin membrane, which in turn is surrounded by the egg white, a liquid much more dilute than the yolk. By osmosis the water passes through the membrane from the more dilute to the more concentrated solution until an equilibrium is obtained. In the egg this process continues until the vitellin membrane becomes so weak that it breaks, when the white and yolk begin to lose their identity. This action proceeds with such definiteness that by a process of calculation, knowing the original weight of the egg, the loss in moisture to the external atmosphere can be calculated with surprising closeness to the actual loss as shown by the balance."

As the change in water content increases its rate with the temperature, and diminishes with the time, it is possible by means of a rate formula which is given to predict the condition of the eggs at any temperature and at a given time within a reasonable storage period. Therefore, "the rate multiplied by the time gives the loss in weight, from which data it is a simple matter to find the percentage of moisture remaining."

FOXHUNTING AND POULTRY-KEEPING.

By B. W. Horne.

President of the Utility Poultry Club.

THE wide publicity given in the Press to the case of certain poultry-keepers in the country of the West Kent Hunt, shows the great amount of interest taken in a subject which for some years has been a pressing one with those engaged in promoting the poultry industry.

The inability of certain poultry-keepers to obtain fair compensation for losses by foxes is causing considerable uneasiness both to those who keep poultry and to those who hunt. The friction between the two parties is increasing to the detriment of both, and it is essential that something be done soon to satisfy their conflicting interests.

The matter is so important that it is desirable to state the present position, and the events that have led up to it.

For some years attention had been drawn in the poultry Press to the grievances of the poultry-keepers, and considerable pressure was brought to bear on the societies interested in the industry to take some action, with a result that in 1910 a Joint Committee was formed of two representatives from the three leading organizations, viz., the Poultry Club, the Utility Poultry Club, and the National Poultry Organization Society; the three societies have a combined membership of upwards of 5,000 poultry-keepers, so that it cannot be said that they are not representative.

At the first meeting of the Joint Committee, a resolution was passed that it disclaimed any hostility to foxhunting as a national sport; it is a fact that should not be lost sight of, as it is clearly evidence of a willingness to compromise. And the spirit of the resolution has always been observed, for the Committee have never proceeded with the consideration of any case where the poultry-keeper has taken the law into his own hands and shot or destroyed foxes. The Committee further resolved that some steps should be taken with a view to preventing the loss arising from depredations through foxes, and of securing fair compensation where such cases had arisen.

In April, 1910, the Committee met the Committee of the Masters of Foxhounds' Association, and stated the grievances of the poultry-keepers, and suggested how they could be remedied, and the following resolution was subsequently passed by the M.F.H. Association at their Annual Meeting:—"That the members of the Masters of Foxhounds' Association present at the General Meeting held at Tattersall's on Monday, May 30th, 1910, unanimously recommend that fair compensation should be promptly paid for all loss of poultry by foxes, but that the same can only be dealt with by each individual Hunt."

A copy of this resolution was sent to every Hunt, and at a subsequent conference between the two Committees it was stated that if any Hunt did not observe the spirit of the resolution it would have to bear the consequences, and would not receive any support from the M.F.H. Association.

No doubt if the statements made at the Conference had been incorporated in the resolution passed at the annual meeting their effect would have been far-reaching and would have brought about a better state of affairs as regards those Hunts which relied on the concluding words as grounds for not doing anything.

However, the passing of this resolution undoubtedly allayed the friction, and resulted in more attention being given to the subject. The Poultry-keepers, though they saw that it was not sufficient to prevent unfair treatment, recognized that it gave them the moral support of the Association, and they were content to see how far it would help them.

In the two years that have elapsed since the passing of the resolution, the Joint Committee has had various cases brought before it, the great majority of which have been satisfactorily disposed of. One case, however, shows how unfairly one Hunt can act, and the need of some stronger pressure than the resolution of the Association. It appears that the Southdown Hunt have a Rule *not to entertain claims for the loss of poultry except in the case of farmers over whose land the hounds hunt or from men in their employment.* Efforts have been repeatedly made since then to persuade the Hunt to rescind such a rule, but without avail, so that the more extreme body of poultry-keepers formed a Poultry-keeping Protection Association with the avowed object of bringing pressure to bear on the Hunt in question. Foxhunters will naturally learn with annoyance that it is understood some sixty foxes have been destroyed privately in the country hunted by this pack, and there is every indication that the work of this Association is going to proceed. In fact, finding the position was not improving, the Association took active steps during the recent National Poultry Show at the Crystal Palace to secure signatures to a petition asking for help from the Government. The petition, which was duly presented to Parliament, received larger support than was expected, and showed unmistakably that the Association had the support of a considerable number of poultry-keepers.

In the meanwhile the attitude of the Southdown Hunt is being proclaimed all over the country, alienating those whose sympathies were hitherto with the foxhunters. The ordinary poultry-keeper is not hostile to foxhunting, but in condoning the

action of the Southdown Hunt he feels he is parting with his rights, and that must be resisted at all cost.

Hunts which have no trouble with their farmers are naturally disinclined to interfere with the action of another Hunt, particularly in a matter which is largely one of finance. But the man in the street does not distinguish between the Hunts, and it is the sport therefore that is accused by him of working a wrong, and he naturally expects those who are participating in it shall set it right. It is for this reason that so many influential papers have drawn attention to the grievances of the poultry-keepers.

land is a very great danger. Some indication of this can be seen in one or two of the questions asked on behalf of the secret "Land Inquiry"; and the claims of the Farmers' Hunt Union for recognition, although put forward by a comparatively small body of farmers, cannot be wholly ignored.

Those who hunt are unaware of the size and growth of the poultry industry, and seem to think that the methods of days long past are suitable for present needs.

For the first time figures were recently published by the Board of Agriculture and Fisheries of the census taken in 1908 of all poultry in holdings

A useful Pen of Utility White Wyandottes. [*Copyright.*

Those who hunt and resent any outside interference in time-honoured systems urge that the Masters of Foxhounds' Association have no power to compel a Hunt to abide by any resolution come to. The same argument can be applied to most of the societies and associations interested in every branch of sport. Hunting men are no less amenable to public opinion than those who participate in other forms of amusement, and if the Masters of Foxhounds' Association lent its weight in the efforts now being made for the removal of these grievances, it is difficult to think it would be unsuccessful. At any rate it would remove the stigma that the Hunts are not trying to secure fair treatment to the poultry-keepers.

This question of compensation for losses arising from foxes will have to be settled, and every effort should be made to bring this about now before the extremists have injured the national sport. Fox-hunting can only exist on suffrance, and the imposition of too great a burden on the farmer and small-holder by those who want to ride over his

exceeding one acre. It appears that the average number of fowls kept in Great Britain per 1,000 cultivated acres was 538, the average number of ducks being 31, and geese and turkeys 12. The total value of the poultry and eggs was estimated at £5,000,000; to this must be added the value of the poultry and eggs produced on holdings of less than an acre, estimated at £2,500,000, making a total of £7,500,000 per annum.

The industry is growing rapidly, and there is every indication that it will prove to be one of the most valuable adjuncts to the farmer. Nor must it be forgotten that in the movement for getting the people back to the land, poultry-keeping is to play an important part.

Already the Development Fund Commissioners have turned their attention to agriculture, and in the Farm Institutes, which are to be founded all over the country, poultry-keeping is to form a part of the curriculum. Steps are being taken to improve the class of poultry, and one of the first grants from the Development Fund was a sum of

£500 given to the Utility Poultry Club for the purpose of holding a twelve months' laying competition, and demonstrating the value of laying strains. In addition, a sum of £8,500, with a further grant not exceeding £2,000 per annum, has been promised conditionally for founding a National Poultry Institute, The Agricultural Organization Society are receiving a very large grant for co-operation in Agriculture, and part of it has been ear-marked for the poultry industry.

With all this money devoted to agriculture out of the National Exchequer, it is hardly likely that any Government of the day will look favourably on a sport if it is going to neutralise, to any large extent, the value of the money so spent.

The claims, therefore, of the poultry-keeper for just treatment by the foxhunter are going to be put forward with much greater weight than formerly, and no time should be lost in coming to a settlement with him. Any movement in this direction should come from the Hunts themselves, for it is incredible that those who take part in the great national sport should seek to do so at the expense of their less well-to-do brethren. Such a rule as that relied upon by the Southdown Hunt ought not to be countenanced, and every effort should be made to get the rule rescinded.

The reluctance on the part of the Hunts to meet the just claims of the poultry-keeper seems to arise from a fear that their finances will not stand the strain, but it would be much more satisfactory to a poultry-keeper to be paid a dividend in the £ on his just claim than to see the indiscriminate distribution of the poultry fund which obtains in some places.

It appears that during the past year Mr. Fernie's Hunt paid no less than £1,300 in poultry claims alone. Considering the comparatively small area covered by the Hunts, the amount seems excessive, and adds another reason for a more careful and systematic method in the payment of claims.

There ought also to be a modification of the inflexible scale of compensation ruling in some of the Hunts. The loss of a pullet in full lay at Christmas, when eggs are dear, should not be met with the same payment as in the case of an old hen or of a chicken being reared for the table.

In any settlement which can be effected, the poultry-keeper is prepared to assist in saving the the Hunts from fraud. The present system of allowing claims to be sent in yearly and of mixing them with cost of removingwire,ought to be replaced by one such as is now in vogue with a certain well-known Hunt, where the large number of local secretaries enable each claim to be dealt with immediately it arises, and the bogus claim is not possible.

Where such a system is in force there is no great difficulty in getting the poultry-keepers to agree to a limit, and in some cases to a percentage of their actual loss; in this way the hunts are not penalised, and it does not pay the poultry-keeper to lose his birds. But what must weigh with the poultry-keeper in any dealing he has with the Hunt is how far he benefits or loses by foxhunting. Less carelessness and more consideration on the part of those who hunt would go far to remove the losses caused by fox-hunting, while the advantages of a market at his door would make the small-holder and poultry-keeper chary of doing anything to interfere with the sport.

The trouble can be settled by fair treatment and with a little give-and-take on both sides. Certainly there is ample evidence that the poultry-keepers are not unreasonable as a whole, and once a satisfactory system were evolved the great mass of them would throw in their weight with the fox-hunting community, who would then be in a better position to deal with the rogues and those who on various grounds wish to see the sport abolished.

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EGG TRAIN FOR NORTH WALES.

The echoes of the Egg and Poultry Demonstration Train, organised jointly by the Agricultural Organisation Society and the National Poultry Organisation Society, which traversed various sections of the Great Western Railway in South Wales nearly three years ago, are still to be heard, whilst the effects of reaching and influencing producers in rural districts are permanently impressed upon the districts visited.

The completeness with which the expedition was carried out, captivated the minds of people at home and abroad.

Many requests have been received from other districts desirous of having a similar service. Various causes have prevented that being carried out. As we announced in our last issue, the two Societies named above are arranging to run one of these trains in North Wales during the latter part of April and early days of May next, which it is hoped will be followed by several others in various parts of the country. In this instance the London and North Western and Cambrian Railways are affording the fullest facilities and are heartily co-operating in the arrangements with the two Societies interested.

Full details of the tour are not yet available, as these are scarcely completed, but will be published in due course. The demonstrations will, however, be on a larger scale than three years ago, as additional railway vans are to be used. In all it is intended to visit about thirty centres in the counties of Flint, Denbigh, Carnarvon, Anglesey, Merioneth and Montgomery.

Diptheria and Fowl-pox.

The bulletin of the International Agricultural Institute quotes from reports on researches made in Belgium and Germany, the result of which is stated to be that "the diseases known under the names of fowl diptheria and fowl pox are etiologically identical, and further, that there is a connection between the pox of fowls and of mammals."

BUFF ORPINGTON DUCKS.

By William Cook & Sons, originators of the Orpington fowls and ducks, St. Mary Cray.

IN these days of commercial poultry keeping, the price of food makes it necessary that the stock consuming it should be yielding a profit on their cost, and, consequently, all breeds which do not show this are being eliminated. Those which are making rapid headway can be without doubt marked down as profitable, because without sterling qualities to make them pay they would soon be discarded, owing to the wide-awake spirit combined with strict accountancy which prevails amongst poultry keepers of the present day. It is, consequently, worthy of note that amongst the various breeds of ducks none has made such record headway as the Buff Orpington. The reason for this is undoubtedly because they have proved themselves to be genuine profit-earners to everyone who has taken them up, and many, seeing how well their friends have done with them, have invested in a pen of ducks or sittings of eggs. It is being proved conclusively that they are, without any doubt, the most profitable of all breeds of ducks, because they can be relied on to produce eggs just at the time when it is absolutely necessary for them to be forthcoming to get the young birds hatched out in time to secure the best prices for table ducklings.

The non-productiveness of eggs in the early part of the season has been for many years the chief difficulty which the duck rearer has to contend with, simply because Aylesburies cannot be pursuaded to come into regular lay in November and December, just when the first eggs should be set to get ducklings out, so that they may be ready to meet the big demand there is for ducklings for the table in the early spring, and the best prices of the year. Although eggs can be obtained from Indian Runners then with but little difficulty, the breed is not a profitable one for hatching by those who require ducklings to sell for the table, as the young birds do not carry the flesh required for this purpose, although they may be acceptable on one's own table at a time when there are no other ducklings available, owing to the difficulty before referred to in getting the eggs to set to produce them.

COALEY FAWN DUCKS.
A variety of ducks introduced by Miss Edwards, which are claimed to be excellent layers, quick growers, and good foragers.

It will be readily understood that size, combined with plenty of meat, must be there to command a price which will pay well for out of season rearing, and until the popularisation of our Buff Orpington duck, this had been hitherto unobtainable.

The Buffs are much larger and plumper birds than Indian Runners, as they average only 1lb. less

than the ordinary Aylesburies, weighing more than 1½lbs. heavier than Indian Runners, and the stock ducks breed and do just as well without water to swim in as with it, whereas Aylesburies do not.

We are convinced that the laying qualities have placed the Buff Orpington ducks at the head of three whole years' laying competitions in Australia, and have made them the most profitable breed of ducks, because they not only lay so well, but fleshen wonderfully, and do not get internally fat either. By obtaining ducks of this breed during the autumn and winter, and spring following, so that by the purchase of one or two breeding pens now a flock of ducks will be raised from these, and by killing the drakes off at from ten to twelve weeks of age, their sale should cover the feeding expenses of the whole season, and at the end there will be a batch of ducks for stock purposes the next season. Provided one hatched on sufficiently large a scale, thousands of ducklings could be raised, and disposed of at remunerative prices within two years of the start with just two pens.

A most profitable plan would be to have two pens of birds unrelated to each other; then the drakes raised from one could be mated with the ducks raised from the other, and vice-versa. Enough drakes for the following year's breeding should be reserved, and the remainder killed. From this small start a man should be able to get a good living after the first year by raising ducklings alone; and the suggested plan of procedure should receive the careful consideration of those who have grass land, or who are not fully occupied, as well as those who want to take up a profitable branch of work in connexion with poultry-keeping, because there is a tremendous demand for table ducklings at paying prices; but hitherto the supply was infinitesimal. Everyone who sees a flock of Buff Orpington ducks running on grass becomes enthusiastic about them, as their colouring is particularly pleasing. They are of a soft shade of buff, and they are entirely distinct and apart from the small fawn breeds of ducks—which are of runner type, and suitable for laying eggs, and not as table birds—because the Buff Orpingtons are plump-breasted birds, taking after the Aylesbury in shape, and not upright, narrow birds like the Indian Runners.

Those who go in for breeding a few ducks for their own table, and utilising the remainder of the eggs for home use, will find a pen of Buff Orpingtons a profitable investment, as each duck will give them from 160 to 180 eggs in the year, and they will very much appreciate, in addition to the constant productiveness of these birds, their one distinctive feature, viz., the absence of that continuous noisy quacking associated with duck-keeping in general, for they are not noisy birds, but, like many quiet people, live and accomplish much.

Now is the time to provide the foundation for a successful breeding season next year, by the purchase of carefully-bred, unrelated stock birds, as this is the cheapest way to go to work, and by obtaining the two pens made up of four strains, the birds which are hatched from these may be mated together when the arrangements are being made for the next hatching season.

Buff Orpington ducks will pay if kept for egg production alone, while, by turning their eggs into ducklings, there is a most satisfactory profit. Everyone who has a grass field at his disposal can profitably run a flock of stock ducks of this breed in it, and raise ducklings for the market, as the ducks do splendidly without swimming water, and the young birds make more progress without than with it.

There is at the present time an excellent sale for pure-bred ducks for stock, and for sittings of eggs of this breed, so that everyone who takes them up now will be able to participate in the profits derived from this branch as well as from commercial sales.

There are breeds which are in vogue at the present day which do not offer such opportunities for success to the amateur, on account of the percentage of good birds being so small that there is not a good bird to be found amongst two dozen chickens bred from the best birds the Fancy has to offer. Repeated failures to secure a few good birds after the expenditure of a good sum for the stock, or eggs, and the exercise of the greatest care in the raising of the youngsters, has disheartened many young fanciers, who, with the encouragement of at least some birds which were near the standard, would have become enthusiastic poultry breeders and exhibitors.

The wisdom of selecting a breed for which there is a regular and ever-increasing demand for all classes of birds raised should not be lost sight of by the would-be successful amateur or embryo poultry farmer, because the ready disposal of all the birds raised at remunerative prices is where the profit-earning capabilities of a breed come in. Intending purchasers of a decent pen birds, or a sitting of eggs as a foundation of future operations, should consider the possibilities of the breed they think of going in for, because where culls are numerous and sale indifferent, there is no hopeful outlook for the future.

In Buff Orpington ducks of reputed strains the young stock come remarkably true to colour, and we have been much gratified during the past spring and summer by the receipt of many letters from people who have purchased ducks of this breed from us, and who have felt it only right to let us know how well they have done with their young birds. While we are glad to say that everyone who has gone in for the breed (and this covers many hundreds of poultry-keepers), we have never yet received a single complaint of unprofitable stock, which we—as their originators—would certainly have done had there been any reason to find fault with them in any way. On the other hand, we have heard from many who tell us that the stock are undoubtedly true Orpingtons, and worthy to be classed with the Buff and White Orpington fowls, because they are not only the very best layers of all ducks, but also fine table birds.

TABLE OF PRICES REALISED FOR HOME, COLONIAL, AND FOREIGN POULTRY, GAME, AND EGGS FOR THE FOUR WEEKS ENDING FEBRUARY 15, 1913.

ENGLISH POULTRY—LONDON MARKETS.

Description.	1st Week. Each	2nd Week. Each.	3rd Week. Each.	4th Week. Each.
Surrey Chickens ...	3/6 to 4/6	3/6 to 4/6	3/6 to 4/6	3/9 to 4/6
Sussex ,, ...	3/6 ,, 4/6	3/6 ,, 4/6	3/6 ,, 4/6	3/9 ,, 4/6
Yorkshire ,, ...	3/0 ,, 4/6	3/0 ,, 4/6	3/0 ,, 4/6	3/0 ,, 4/6
Boston ,, ...	3/0 ,, 4/0	3/0 ,, 4/0	3/0 ,, 4/0	3/0 ,, 4/0
Essex ,, ...	3/0 ,, 4/0	3/0 ,, 4/0	3/0 ,, 4/0	3/0 ,, 4/0
Capons	5/0 ,, 6/0	5/0 ,, 6/0	5/6 ,, 6/6	5/0 ,, 6/6
Irish Chickens	2/3 ,, 3/6	2/3 ,, 3/6	2/3 ,, 3/6	2/6 ,, 3/6
Live Hens.....	2/3 ,, 3/3	2/3 ,, 2/9	2/0 ,, 2/9	2/0 ,, 2/9
Ducks	3/6 ,, 4/6	3/6 ,, 4 0	3/6 ,, 4/0	3/6 ,, 5/0
Geese .....per lb.	/9	/9 ,,	/8 ,, /9	/8 ,, /9
Turkeys, English,,	/9 ,, 1/0	/9 ,, /11	/7 ,, /10	/7 ,, /9
Guinea Fowls	2/6 ,, 3/0	2/9 ,, 3/3	2/9 ,, 3/3	2/9 ,, 3/3

ENGLISH GAME—LONDON MARKETS.

Description.	Each.	Each.	Each.	Each.
Grouse (Brace)	— —	— —	— —	— —
Partridges ..,, ...	2/0 ,, 2/6	2/0 ,, 2/6	— —	— —
Pheasants ..,, ...	2/9 ,, 3/0	2/9 ,, 3/3	2/9 ,, 3/3	— —
Black Game	2/0 ,, 2/3	2/0	2/0	2/0 ,, 2/3
Hares.....	— —	— —	2/6 ,, 3/0	2/6 ,, 3/0
Rabbits, Tame.....	1/3 ,, 2/3	1/3 ,, 2/3	1/3 ,, 2/3	1/3 ,, 2/3
,, Wild	/9 ,, 1/1	/9 ,, 1/0	/8 ,, 1/0	/9 ,, 1/0
Pigeons, Tame.....	— —	— —	— —	— —
,, Wild	— —	— —	— —	—
Wild Duck	1/9 ,, 2/0	1/9 ,, 2/0	1/9 ,, 2/0	2/0 ,, 2/3
Woodcock	2/0 ,, 3/0	2/0 ,, 3/0	2/0 ,, 3/0	2/6 ,, 3/0
Snipe	/9 ,, 1/6	/9 ,, 1/6	/9 ,, 1/6	/9 ,, 1/6
Plover	/6 ,, 1/0	/6 ,, 1/0	/6 ,, /10	/6 ,, 1/0

ENGLISH EGGS (Guaranteed New-Laid).

Markets.	Per 120.	Per 120.	Per 120.	Per 120.
LONDON	13/6 to 14/-	12/6 to 13/6	12/6 to 13/6	12/6 to 13/6
Provinces.	Eggs per dozen.	Eggs per dozen.	Eggs per dozen.	Eggs per dozen.
CARLISLE	1/6	1/4	1/4	1/6
BRISTOL.....	1/6	1/3	1/3	1/5

FOREIGN POULTRY—LONDON MARKETS.

Countries of Origin.	Prices Realized during the Month. Chickens. Each.	Ducks. Each.	Ducklings. Each.	Geese. Per lb.	Turkeys. Per lb.
Russia	— —	— —	— —	— —	— —
Belgium	— —	— —	— —	— —	— —
France	— —	— -	— —	— —	— —
United States of America ...	— —	— —	— —	— —	— —
Austria	— —	— —	— —	— —	— —
Canada	— —	— —	— —	— —	— —
Australia...	— —	— —	— —	— —	— —

FOREIGN GAME. London Markets.

	Price Each During Month.
Capercailzie	— —
Black Game	— —
Ptarmigan	1/0 to 1/3
Partridges	1/6 to 1/9
Quail	— —
Bordeaux Pigeons	1/0 to 1/6
Hares	— —
Rabbits	— —
Snipe	— —

IMPORTS OF POULTRY AND GAME. Month ending Jan. 31st, 1913.

Countries of Origin.	Declared Values. Poultry.	Game.
Russia	£66,153	£7267
France	£12,912	£116
Austria-Hungary	£19,665	
United States of America	£44,962	£12
Other Countries.....	£7.678	£5,8c6
Totals.....	£151,370	£4,873

IRISH EGGS.

Description.	1st Week. Per 120.	2nd Week. Per 120.	3rd Week. Per 120.	4th Week. Per 120.
Irish Eggs	11 0 to 12/0	10/0 to 11/0	10/0 to 11/0	10/6 to 11/6

FOREIGN EGGS.

Description.	1st Week. Per 120.	2nd Week Per 120.	3rd Week. Per 120.	4th Week. Per 120.
French ...	11/0 to 12/0	10/0 to 11/0	10/0 to 11/0	10/6 to 11/6
Danish ...	11/0 ,, 13/0	10/3 ,, 12/6	10/3 ,, 12/6	10/9 ,, 13/0
Italian ..	11/0 ,, 12/6	10/3 ,, 11/6	10/9 ,, 12/3	10/9 ,, 12/3
Austrian .	8/3 ,, 10/0	7/6 ,, 9/0	7/9 ,, 9/0	7/3 ,, 9/3
Russian...	8/3 ,, 9/3	6/0 ,, 8/0	6/0 ,, 8/0	6/0 ,, 8/0

IMPORTS OF EGGS. Month Ending Jan. 31, 1913.

Countries of Origin.	Quantities in Gt. Hund.	Declared Values.
Russia.....	435,687	£204,576
Denmark	324,678	£198 581
Germany	71,584	£31,411
Netherlands ..	51,682	£27,591
France	23,862	£12.222
Italy.....	89,216	£48.769
Aust.-Hungary	131,464	£61,895
Other countries	426,005	£164,815
Totals	1,554,178	£749,630

CHICKEN REARING ON AN INTENSIVE SYSTEM.

[It gives us pleasure to publish a note which appears in the current issue of the Journal of the Board of Agriculture relating to the experiments carried out by Mr. Paynter, a full account of which we published in our January issue. As we have previously pointed out, Mr. Paynter's work must be considered as in the experimental stage and cannot be fully accepted without further trials.—Ed. I.P.R.]

IN connexion with the system of intensive chicken rearing adopted by Mr. F. G. Paynter, and described in this *Journal* for December, 1912, p. 721, it may be pointed out that the system described must still be regarded as in the experimental stage. It is most undesirable that those who have not already a thorough practical acquaintance with the management of poultry should attempt to adopt such a system, as it demands much more knowledge, skill, industry and care than are necessary where poultry-keeping is conducted under ordinary conditions.

A general description of the equipment used in Mr. Paynter's experiment, and of the methods adopted by him, will be found in the article referred to above; but attention may be drawn to the fact that, in addition to the possession of adequate capital, and a suitable area of land in proximity to a market, a thorough practical knowledge of the best methods of artificial incubation and rearing is indispensible for anyone who proposes to attempt to carry out the system on the scale described in the article.

Those who have not the necessary knowledge are recommended either not to attempt such an experiment or to begin operations in a purely tentative way, with a view to gaining practical experience of the proper methods, and of testing their own qualifications for such an enterprise.

Success in dealing with all classes of livestock depends on certain aptitudes in the individual which are not possessed by all, and also a practical experience which can only be gained in the course of time. In addition, it must be remembered that, in all such undertakings, business capacity and the faculty for giving attention to detail are determining factors. The beginner is advised to regard intensive chicken-rearing as an occupation requiring skill and experience without which success is unlikely to follow the adoption of any particular method, however admirable.

It would be undesirable, therefore, for the inexperienced to invest in a plant capable of raising 3,000 chickens in the season, though useful experience may be gained by attempting to raise say, one-twentieth of that number. In purchasing appliances for artificial incubation and rearing, those of the size recommended by Mr. Paynter might be used with a view to future development, but there would be no necessity to work the appliances up to their full capacity. Thus a beginner might test the suitability of the system to his individual circumstances and ability by the purchase of an incubator and one rearer, and provide, in addition, the plant necessary for 100 to 150 chickens. He must not expect the financial results of this tentative effort to produce a return proportional to that indicated as attainable under the complete system, but should regard the outlay as a necessary expenditure in training.

Such a method, if carried out systematically, would not only be the means of securing some practical experience of production, but would also give the beginner some knowledge as to local demand and prices, and methods of marketing.

As is indicated in the previous article in the *Journal*, Mr. Paynter is now conducting, under the auspices of the Board, a demonstration of his system at Haslington Hall, Crewe. For the novice who *seriously* contemplates devoting attention to intensive chicken rearing, probably the most satisfactory course to pursue would be to visit, during the spring or early summer of the present year, the demonstration which is in progress. Those who wish to pay such a visit should write to enquire when arrangements can be made to receive them. Mr. Paynter's time is fully occupied and an appointment will be necessary.

The Boys' Share in Poultry-Keeping.

Prof. A. A. Brigham, says: "One of the best plans is to take the boy into partnership with yourself. It will be fine for both the 'old boy' and the young one. You'll be the leader at first, but will soon find that a father has to be active if he will keep up with a wide-awake boy, who has really become interested in pure-bred poultry of the right kind."

The Rural Problem.

At the last meeting of the American Poultry Association, Mr. O. P. Barry, a wholesale trader, in the course of an interesting address, remarked: "There is a vast army of people that live away back in the rural districts, they live on small farms, perhaps they are tenants on farms, yet they constitute a great element of the producers of the country in the production of poultry and poultry products. How are you going to reach this great mass of people? Perhaps fifty per cent of the agricultural element of the south read no daily paper; they read none of your poultry publications; they read no farm papers; and now the question is, how are you going to reach these people? They must be reached before the market conditions of this country will be what they ought to be. It is impossible for the shippers of this territory, or any other territory, as far as that is concerned, to offer to the consuming public an article that is wholesome and nutritous, unless we have access to production of this character."

NORTHERN UTILITY POULTRY SOCIETY'S LAYING COMPETITION.

The fourth month has been very similar to the same period of last year, with plenty of rain. However the 13 hours of sunshine compared favourably with the 2½ hours record in the third month. But the fourth month of this competition will be remembered for the whirling blizzard of January 11th, when there was a deep fall of snow which, assisted by a gale, formed drifts and compelled the birds to remain in the houses for several days. In the last week there was a second fall of snow and hail, and altogether the month has been disagreeable.

RESULTS.—The total number of eggs laid in the trap nests is 2591, with 27 unaccounted for, making a total of 2618 for the month. Pen 26 (Buff Orpingtons) make the highest score for the month with 91 eggs. No. 8 making the best individual score for the second time with 25 eggs. No. 101 being a good second with 24. Whilst the severe weather had a marked effect upon the Leghorns, it did not make any impression upon the Heavy breeds.

BROODINESS.—Nos. 13, 100, 106, 116, 117, 121, 124, 132 have been broody during the month.

MOULTING.—Nos. 83, 147, 169 are moulting.

DOUBLE-YOLKED EGGS.—Nos, 29, 33, 78, 118 have each laid double-yolked eggs.

COLDS.—Nos. 37, 40, 44, 46 have suffered from colds.

EGGS NOT ACCOUNTED FOR.—During the competition 90 eggs have been laid which the Managers could not account for, principally being found on the dropping boards. Three sets of birds were in each house, and the number of eggs found in each are as follows:—No. 1 House—6, No. 2—6, No. 3—10, No. 4—5, No. 5—4, No. 6—4, No. 7—1, No. 8—5, No. 9—8, No. 10—4, No. 11—10, No. 12—5, No. 13—3, No. 14—4, No. 15—8, and No. 16—7.

WINNERS OF PRIZES.

Open Section.

1st and Challenge Cup.—Buff Orpingtons. No. 26. Miss Marjorie Fowler, Park Lodge, Feniscowles.

2nd.—White Wyandottes.—No. 16. Mr. Tom Barron, Catforth, near Preston.

3rd—White Wyandottes.—No. 6.—Mr. Edward Cam, Hoghton, near Preston.

4th.—White Wyondottes. No. 2. Mr. Will Barron, Bartle, near Preston.

5th.—White Wyandottes. No. 11. Mr. John Wrennall, Withnell, Chorley.

Local Section.

1st.—White Leghorns. No. 46. Mr. William Crossley, 10, Sand Street, Burnley.

2nd.—White Wpandottes. No. 20. Mr. Leonard Green, Vale House, Whalley.

3rd.—White Wyandottes. No. 22. Mr. Robert Pollard, Lord's Farm, Ightenhill, Burnley.

4th.—Buff Orpingtons. No. 28. Mr. Johnson Eastwood, 81, Ormerod Street, Accrington.

5th.—Anconas. No. 41. Mr. T. H. Walters, 100, Brockenhurst Street, Burnley.

C. LONGBOTTOM, Hon. Sec.,
28, St. Matthew Street, Burnley.

Parliamentary Poultry Topics.

The New Zealand Legislative Assembly has had a healthy discussion on poultry, chiefly respecting laying competitions. So the world wags on.

The Evils of Speculation.

The maddening thirst for abnormal egg-producers, says the *New Zealand Poultry Journal*, has done little good for the egg market, but has certainly ruined the table branch of the poultry industry. A few years ago the farmers raised thousands of birds for the table, of excellent quality, healthy and palatable. The old cross-breed, the result of promiscuous breeding, gave us excellent supplies; now these have been replaced by the White Leghorn, with the result that our markets have been depleted.

The G.C.R.

We have just received a copy of the 4th issue of the Homestead, the G.C.R. Company's Official Residential Gazette. This guide is profusely illustrated with excellent up-to-date photographs, which clearly set forth the beautiful country covered by the Company's London Suburban Services. For easy reference the guide is issued in A.B.C. form, and in addition to a concise description of each place, useful local data as to the rates, charges for gas, electric light, particulars of population, altitude, season ticket rates, &c., are given. Frequently those seeking a new home want it in a place not too far from the Metropolis, where pleasant and healthy rural surroundings still exist. Delightful vistas of such places are to be found in this admirably executed magazine, which can be had for the asking at Marylebone Station and G.C.R. Town Offices, or will be sent post free by Publicity Department, 216, Marylebone road, N.W.

The Feathered World Year Book, 1913.

For the fourth year in succession the Feathered World Year Book has just made its appearance. Profiting by the experience of three previous successful editions, the editors, Mrs. Comyns Lewer and Mr. S. H. Lewer, have made still further improvements in its contents, and, with the wonderful development in poultry and pigeon photography, have advanced the general excellence of their illustrations. Among the points of special note this year are the expansion of the Breeders' Tables to double their size and the inclusion of January, 1914, so as to allow of notes being included up to the publication of the next editon. Important inclusions in the letterpress are a series of "Monthly hints for poultry keepers," by Mr. Inman, based on his wide experience in replying to questions in the weekly columns of "The Feathered World"; Mr. Turnbull's hints to fanciers on "Odds and Ends," and on "Technical Terms"; Mrs. Baynes notes on "Intensive Poultry Culture"; Mr. Tom Barron's justification of "Utility Poultry Farming" and Mr. Mothersole's instructive article on "Table Poultry." There are also excellent articles dealing with the position of the poultry industry in Canada, United States, South Africa, and Australasia, so that anyone with this excellent year-book is kept absolutely up-to-date with poultry matters throughout the world. Full particulars are given of the various breeds as well as a list of all the prize-winners, and the winning birds at the various shows held during 1912. So complete is this list that the publication of the work was delayed in order that it might include the particulars of the several important Club Shows which were not held till January of this year. The bulk of the photographs were taken by "The Feathered World Bureau," and Messrs. F. Robinson and S. C. Avis have collected a really remarkable gallery of bird portraits.

TRADE ITEMS.

A Royal Warrant.

We are informed that the proprietors of the Molassine Poultry, Chicken and Game Foods have been created by special appointment Royal Warrant Holders to His Majesty the King.

Malted Meal for Chickens and Ducklings.

At this season of the year all poultry-keepers are on the look out for anything in the way of new foods that will ensure economy and efficiency in feeding. The proprietors of the "Clarendo" Poultry Foods, which have proved so successful in the past for egg-production, chicken rearing and fattening for the table, have introduced a malted meal for rearing chickens and ducklings. It consists of scientifically milled cereals of high feeding quality, blended in well balanced proportions with a preparation of malt, which is not only an excellent food in itself, having over 40 per cent. of flesh formers, but it contains diatetic properties which have the effect of considerably assisting digestion. This malted meal has also the addition of dried milk, and the combination provides a food admirably suited for rearing all stock. In order to bring this meal within the reach of all, the proprietors, Messrs. White, Tomkins, and Courage, Ltd., 48, Mark Lane, E.C., have put the price at 10/6 per cwt. Anyone ordering 1 cwt. of this food during the month of March mentioning the *Illustrated Poultry Record* will receive a pound of Vido, a malt food tonic which is sufficient for a pen of six birds for a fortnight.

The Radiator.

It was an American who once said that the only way to obtain warmth in a British house was to get on to the roof and sit on the chimney. His view was the correct one, for there is no doubt that a very large amount of heat goes up the chimney. It is to this that the increasing popularity of gas radiators can be attributed. In their case the heat is given out and is not wasted. Chief among gas radiators is the Duplex; the healthy economical effective Duplex radiator is different in both action and principle from all other radiators. In the Duplex a white non-bunsen flame of great heat is used. No carbon monoxide is produced and all the combined parts of the gas are consumed. No flue is therefore necessary and the whole of the heat is kept in the room. This complete combustion of the gas and the fact that none of the heat is allowed to escape are two of the many reasons for the wonderful economy of the Duplex. The Duplex radiator is a fine example of modern scientific achievement and is perfect in principle and performance. It is sold by the Duplex Radiator Co., 16, Boar Lane, Leeds.

A Go-Ahead Firm.

We have received a copy of Messrs. Robert Toope & Company's 1913 catalogue, a bulky volume consisting of nearly 80 pages, and containing full particulars of the many excellent appliances made by this up-to-date and progressive firm. The Asbestic Hen Incubator has been referred to on previous occasions in the *Illustrated Poultry Record*. Among other appliances may be mentioned the "Saivtime" turning tray which solves the problem of keeping eggs successfully for incubation.

Messsrs. Toope & Co. are the only makers of a British mammoth incubator, and this is made in various sizes with a capacity of from 600 eggs. Excellent results have been achieved with this machine, and those who have used it speak very highly concerning the results they have obtained. The catalogue is too big to refer to in detail. We recommend our readers to write to the company whose address is 1, White Horse Lane, Stepney, E., for a copy of the book.

The Works at Harborne.

We learn on the best authority that poultry farming on an extensive scale is by no means confined to this country and the U.S.A., as big plants are being fixed up in many foreign countries for carrying on poultry culture on a large scale.

Huge consignments of incubators and foster mothers have recently been shipped by Mr. A. E. W. Phipps, Midland Works, Harborne, Birmingham. Over £400 worth of incubators of the various types manufactured by this firm, have just been shipped to Melbourne and Sydney, Australia, by Messrs. Shaw Lovell & Co., of Liverpool. Another consignment of upwards of 50 incubators has been forwarded to Mon. Forido Cordeiro, of Parana, Brazil. A third consignment of some 40 machines and a large number of sundries have been despatched to to the Indian agent, Mr. A. C. Bullmore, Madras.

A Successful Lady Poultry-Keeper.

Miss Edwards, of the Coaley Poultry Farm, Gloucester, is one of the best known exhibitors and exporters of Orpingtons in the country, and the results which she has achieved during the last few years have been very striking. Her new catalogue is extremely interesting, giving particulars as it does of all the varieties maintained upon Miss Edwards' farm. We understand Miss Edwards has recently sent pens of Buff Orpingtons to Saxony, to Nigeria, to British Columbia, and to Smyrna, while she has sent White Faverolles, Silver Campines, White Wyandottes, White Leghorns, and Barred Rocks to America.

An attractive Catalogue.

Mr. W. Holmes Hunt has favoured us with a copy of his 1913 catalogue, and we congratulate him upon the excellent manner in which the catalogue is produced, particularly upon the frontispiece in colours, which depicts a trio of Red Orpingtons, of which variety Mr. Holmes Hunt is the originator. The catalogue contains a large number of illustrations both of the farm and of the stock, and our readers cannot do better than send for a copy.

Talbot.

It has always been our policy to insist that other things being equal this country could produce an article which would beat anything from abroad. We say that without detriment to many excellent foreign productions, but we believe in the healthy rivalry between the nations. The effect of this has never been better shown than in the marvellous performances of the 25 h.p. Invincible Talbot car at Brooklands last month. Here we have an entirely British car with an engine capacity of only 4,531 centimetres, attacking records made by foreign cars fitted with engines of over 15,000 centimetres capacity. It seems incredible that such a comparatively small engine should have been able to achieve what the big foreign cars have been unable to do, yet this is a fact. Not only did the Talbot break the 50 miles and 100 miles world's records but it was the first car to accomplish 100 miles within the hour. For years manufacturers have been striving after this coveted honour, and it is with some feeling of pride that we realise that it should at last have fallen to a car which was entirely British in its manufacture. We have had occasion previously to comment upon the excellence of Talbot cars, and we congratulate the Company on the high honours it has won. The engine and chassis were both standard and the same size as those supplied with the Company's ordinary 25 h.p. cars. The Company has issued a very interesting illustrated booklet on this memorable performance, copy of which will be sent post free to any reader who will drop a line for it to Clement Talbot, Ltd., Barlby Road, Kensington, London, W.

The Illustrated Poultry Record Series

OF

LANTERN SLIDES.

THE SLIDES ENUMERATED BELOW CAN BE SUPPLIED FOR 1/- EACH.

FEEDING.—A1. Value of Elements.——A7. Food Consumption.—— A3. Feeding-Pen for Chickens. —— A2. Feeding-Trough.—— A4. Bottle Fountain. —— A5. Metal Fountain. —— A6. Feeding-Block for Chicks.—— A8. Feeding-Pen for Ducklings.

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NATURAL INCUBATION.—A13. Basket Nest.——A14. Double Nest, with Run.—— A15. Double nest, with Run Unattached.——A16. Sitting Hen Feeding-Cages.——A17. Hatching-Shed.——A18. Hatching-Box.

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APPLY TO

The Illustrated Poultry Record,

TUDOR HOUSE, TUDOR STREET, E.C.

EXPORTATIONS.

William Cook & Sons' Exports,

Messrs. William Cook & Sons, originators of all the Orpington fowls and ducks, of Orpington House, St. Mary Cray, Kent, have shipped the following birds to customers abroad during the past few weeks.

Per s.s. "Tango Marn," a first-class pen each of white and black Orpingtons to Colombo. To California a trio of Modern Black Red Game. To Rio de Janeiro, per s.s. "Thames," a pen each of black Orpingtons, white Wyandottes, Buff Orpington ducks and white Leghorns. To Valparaiso two pens of white Leghorns and one each of Indian Game, Aylesburys, and buff Orpington ducks. To Rio de Janeiro two pens each of Barred Rocks and black Orpingtons. Per s.s. "Spencer," to Rio a pen each of black and white Orpingtons. To Baste, Switzerland, a pen of blue Orpington ducks. Per s.s. "Minneapolis," to the United States, three pens of blue Orpington fowls and four each of white and buff Orpingtons. Per s.s. "Indralema," a pen of buff Orpington ducks and one of black Minorcas to North Island, New Zealand. To Bayern, a Faverolle cockerel. Per s.s. "Gandah," to Lagos, pens of Langshans, black and white Leghorns, Indian Runners, buff Orpington ducks, etc. To Rio de Janeiro, several pens of barred Rocks, buff Orpingtons, and black ditto. Per s.s. "Evesham," to Buenos Aires, two white Orpington cockerels. To Leipzig, a pen of Rhode Island Reds. To Jerusalem, per s.s. "Sailor Prince," two pens of white Orpingtons, and to Egypt by same boat, a pen each of white Wyandottes, black Orpingtons, buff Orpingtons, buff Orpington ducks and American Mammoth Bronze Turkeys. To Lieden, Holland, a pen of buff Orpingtons. To Lisbon, per s.s. "Peninsula," a blue Orpington cockerel. To Idaho, U.S.A., a trio of white Runner ducks. Per s.s. "Mesaba," to New York three pens of blue Orpingtons, six buff Orpington cockerels, three pens of black Orpingtons and several of whites. To Montevideo per s.s. "Norman Prince," a pen of buff Orpingtons. To Graenendal, Belgium, a pen of buff Orpingtons. Per s.s. "Tintoettor" to Rio de Janiero, five pens of barred Rocks. Per s.s. "Kildonan Castle," a pen of white Leghorns, to Cape Town. Per s.s. "Professor Woermann," two pens of brown Leghorns, and a pen each of white and buff Orpingtons, black and white Leghorns, to Accra. Per s.s. "Nerehana," to Sydney, four pens of Jubilee Orpingtons. Per Wells Fargo Express two pens of buff Orpingtons and a white Orpington cockerel to Canada.

Mr. Tamlin's Exports.

The following is a list of Mr. W. Tamlin's exports for January, 1913: ten 60-egg incubators, twenty 100-egg incubators, five 30-egg incubators, twenty-two 200-egg incubators, one Ostrich incubator, ten 60 Sunbeam rearers, ten 100 Sunbeam rearers; to Fernand Colman, agent for Belgium; one 200-egg incubator, to Messrs. Alexoff & Co., Russia; one 60-egg incubator, to J. Thomas, Colombo, order of Darby & Butler; one 60-egg incubator and one 60 foster mother, to Loebersdorg, Austria; six 100-egg incubators, six 60 and six 30-egg incubators, twenty 60 foster mothers, to Woodhead, Plant & Co., agents for Cape Town; six 30, six 60 and six 100-egg incubators, to Treacher & Co., agent for Bombay; one 100-egg incubator, to M. H. Newbury, Queensland, S. Africa: eight 100, ten 60 and six 30-egg incubators, to Andre Masson, agent for France; one 200-egg incubator, to E. Elholm, Finland; ten 60 and ten 100-egg incubators to H. E. Mascarenhas, agent for Portugal; six 60, and six 100-egg incubators, to J. F. Marshall, sole agent for the Transvaal, S. Africa.

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who are not only

ORIGINATORS OF ALL THE ORPINGTONS

but the largest Genuine Breeders of all classes of Poultry in the United Kingdom

All letters from the original firm of Cooks, bear above illustration of White Orpingtons.

Possess the largest flocks of profit-earning ducks in this country, every bird mated being typical of fine colour and possessing unequalled laying qualities. They offer—

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BUFF ORPINGTONS: From winners at good shows—to produce ducks for keen competition per doz. £1 1 0
From good pure birds of perfect colour, from their special laying strains .. per doz. £0 10 6
From birds of good colour, and equal to those in the other pens as layers .. per doz. £0 7 6

Their originators have the finest stock of this grand breed in this country. They are undoubtedly the duck of the future, as they lay nearly 200 eggs each yearly—and consequently ducklings can be produced all the year round—and they make as good table birds as Aylesburys

BLUE ORPINGTONS.—These ducks are as large as the biggest Aylesburys, and yet average 150 eggs each per year. From best pens of birds of perfect colour .. .. .. per doz. £0 10 6
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AYLESBURYS.—From massive, deep-keeled ducks, fit for keenest competition per doz. £1 1 0
From large birds and good layers per doz. £0 10 6
INDIAN RUNNERS.—From No. 1 Pen, containing birds fit for keenest competition per doz. £0 10 6
From Pen No. 2, containing ducks which are of fine type and excellent layers per doz. £0 7 6
WHITE RUNNERS.—A few of the choicest ducks of this breed are now mated at St. Mary Cray, and eggs can be supplied at .. per doz. £0 10 6

They can now supply Pens of CAREFULLY MATED BIRDS

Buff Orpingtons
White Orpingtons
Black Orpingtons
Jubilee Orpingtons
White Leghorns
Black Leghorns
Black Minorcas
Houdans
Barred Rocks
Croad Langshans
White Wyandottes
Partridge Wyandottes
Columbian Wyandottes
Indian Game
Speckled Sussex
etc., etc.

Consisting of six early pure-bred Pullets, from their guaranteed laying strains, producing 200 eggs each per year, with an unrelated Cockerel or 1911 Cock, £3 10s.

The same number of typical Pullets from their record layers, with a fine prize-bred Cockerel, of best type and good laying strains, £4 4s.

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Also reliable Male Birds large-boned, vigorous, January and February hatched cockerels, of good type and colour, of all above breeds, at 21/- each; and well-bred January and February birds, which are fit for mating, and full of stamina and vigour, at 15/6 each; and large, useful, pure-bred birds at 10/6 and 12/6 each in all breeds except Indian Game, which are 15/6 each. Unrelated early pullets 10/6, and April ditto 9/6 each in all breeds.

They are also Breeders of every class of DUCKS, GEESE and TURKEYS, and prices will be sent on requirements being mentioned.

Quotations for birds in single numbers or more will be sent per return of post if inquirers will kindly mention their requirements.

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White Leghorns	**Columbian ,,**
Black Leghorns	**Rhode Island Reds**

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White Orpingtons
Jubilee Orpingtons
White Wyandottes
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Speckled Sussex
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White Leghorns and Black Leghorns

From birds of good type and colour, and large eggs .. doz 12s. 6d.

From their prize pens, containing birds of finest type and colour, combined with good laying qualities, per doz. .. £1 1 0

From Challenge Cup pens:—

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Safe Delivery at every Station guaranteed.

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